June 2000

OE # 9703-003

HEALTH & SAFETY PLAN:

Drum Stabilization and Characterization at the Former New Brunswick Paving Area

Cornell-Dubilier Electronics Site
333 Hamilton Boulevard
South Plainfield, New Jersey

Submitted to

U.S. Environmental Protection Agency, Region II
Removal Action Branch
2890 Woodbridge Avenue
Edison, New Jersey 08837

Prepared for

DSC of Newark Enterprises, Inc.
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TABLE OF CONTENTS

TABLES

FIGURES

1.0 SCOPE AND APPLICABILITY

The following Health and Safety Plan (HASP) is intended to serve as the minimum requirements for implementation of site activities. The information contained herein presents the health and safety procedures to be employed during the course of work activities at a regulated hazardous waste site, or where environmental contaminants may be encountered during the course of field operations. This HASP has been prepared to address health and safety issues specific to the Cornell-Dubilier Electronics site, as well as satisfy the requirements of OSHA's Standards for Hazardous Waste Operations and Emergency Response (29 CFR 1910.120) and EPA's Standard Operating Safety Guide, (OSWER Directive 9285.103, June 1992).

2.0 LIMITATIONS

This HASP provides the minimum health and safety requirements to be employed while performing site activities at the Cornell-Dubilier Electronic Site, hereinafter referred to as the "Site." This plan is not intended to be a comprehensive training manual nor does it detail all procedures that may be utilized on site, however, it is intended to be a guidance manual for specific site operations deemed appropriate. Detailed information and guidance on materials covered in this plan were adopted from general accepted industry standards and professional practices. All regulations of the Occupational Safety and Health Act (OSHA) are to be adhered to by Oxford Environmental, Inc., its employees, representatives and subcontractors, and shall be responsible for initiating, maintaining, and supervising all safety protocols and programs in connection with the work.

This HASP has been prepared based on information reviewed from previous studies prepared by third parties, consultants, and regulatory agencies, including but not limited to the U.S. Environmental Protection Agency, its subcontractors and other third parties. Oxford Environmental, Inc. makes no warranties, either expressed or implied, as to the accuracy or completeness of information contained in the documents reviewed to aid Oxford in the preparation of this HASP. As such, the procedures and requirements set forth herein are intended as minimum guidelines for the implementation of the site activities.

This HASP is a living document that will be subject to review and/or revision by the designated Site Health and Safety Officer (HSO) and Health and Safety Manager (HSM), as often as necessary to adapt to changing site conditions, or as site specific health and safety issues arise. The implementation of this HASP shall not relieve other parties from compliance with applicable federal, state, or local regulations or statutes.

3.0 STATEMENT OF WORK

The work to be performed for the implementation of this HASP consists of site stabilization measures to eliminate existing potentially *imminently dangerous* conditions at the Site. The potential conditions are a result of the identification of site materials at the site from site investigation activities conducted by the EPA and its contractors. Typical contaminants of

concern found in subsurface soils consist primarily of polychlorinated biphenyls (PCBs), heavy metals (lead, cadmium, chromium), and some polynuclear aromatic hydrocarbons (PAHs).

In accordance with correspondence letter dated April 25, 2000, the EPA discovered twelve empty drums and several empty containers in the area formerly occupied by New Brunswick Paving during site preparation activities. Accordingly, EPA notified the DSC of Newark Enterprisies (the current owner) and Oxford Environmental, Inc. (facility coordinator) of the discovery, to conduct drum stabilization and characterization to determine the contents of the drums. This HASP addresses the requirements for conducting site activities in response to EPA's request.

4.0 SITE DESCRIPTION

Site Name:	Cornell-Dubilier Electronics Site
Location:	Hamilton Industrial Park 333 Hamilton Boulevard South Plainfield, New Jersey
Site Occupants:	Approximately fifteen business occupying on-site structures
Site Access:	Paved driveways from Hamilton Boulevard.
Known Hazards:	PCBs (specifically Aroclor-1254), lead, arsenic, cadmium, chromium, copper, mercury, silver and zinc in surface and subsurface soils throughout the site.
Areas of Concern:	Surface soil, subsurface soil throughout site, especially around fenced-in area and foot/bike path at the rear of site; stream sediment in the unnamed tributary of Bound Brook; impact to groundwater has not been determined.
Surrounding Population:	Approximately 540 persons reside within 0.5 miles of the Site, with the nearest residential homes being located on Spicer Avenue and on the opposite side of Hamilton Boulevard.

5.0 AREA OF CONCERN

According to the site investigation reports reviewed, the entire site is to be considered an area of concern. The primary area of concern is located towards the rear of the site where electrical components were identified in the surface and subsurface soils.

Analytical results for samples collected by the U.S. EPA indicate that PCBs, lead, and various heavy metals were found to exceed the acceptable federal and state standards. No determination or effort has been made to determine impact to groundwater. The table below presents the contaminants and their concentrations found at on site:

Area of Concern	*Contaminant Concentration*
Unpaved stone and gravel driveways, parking areas, and walkways	PCBs (340 mg/kg, roadway) Lead (340 mg/kg, roadway) Arsenic (09 mg/kg, roadway surface) Cadmium (373 mg/kg, beneath unpaved roadway)
Surface soil, various locations	PCBs (1,100 mg/kg to 51,000 mg/kg, fenced area) Lead (2,200 mg/kg, soil) Arsenic (25.7 mg/kg, soil) Cadmium (36.1 mg/kg, soil) Chromium (78.6 mg/kg, soil) Copper (3,020 mg/kg, soil) Mercury (2.9 mg/kg, soil) Silver (26.7 mg/kg, soil) Zinc (1,380 mg/kg, soil)
Subsurface soil, various locations	PCBs (22,000 mg/kg, subsurface soil) Lead (7,460 mg/kg)
Stream	Trichloroethene (120 ug/kg, sediment; 2 ug/l, surface water)
Foot/bike path	PCBs (3,000 mg/kg, soil) Lead (66,000 mg/kg, soil) Cadmium (271 mg/kg, soil)

According to the Work Plan, contaminated soil has been identified at unpaved, gravel driveways, parking areas and walkways. These areas will be paved over to eliminate potential imminent danger to the site occupants, the surrounding population, and the general public. The area for paving has been estimated based on site plans, environmental reports, observation of existing conditions. Actual area shall be based on land survey and engineering design activities.

6.0 EXCLUSION ZONE

For the purpose of this Site Operations Plan, the Exclusion Zone is defined as the area where contaminated media may be encountered during the course of implementing the work plan. In addition to areas of known PCB contamination, areas where drainage controls will be installed shall be incorporated as part of the exclusion zone, including but not limited to detention ponds, stormwater retention basins, trenches and delay structures.

7.0 PROJECT ORGANIZATION

The following and organizations key personnel are critical to the planned activities at the Site. The organization structure will be reviewed and updated periodically by the facility coordinator.

- Lead Agency:
  U.S. Environmental Protection Agency, Region II
  Removal Action Branch
  2890 Woodbridge Avenue
  Edison, NJ 08837

- Owner/Respondent:
  DSC of Newark Enterprises, Inc.
  70 Blanchard Street
  Newark, NJ 07105

- Owner's Consultant:
  Oxford Environmental, Inc.
  43 Route 46 East
  Pine Brook, NJ 07058

- Subcontractor(s):
  AWT Environmental Services, Inc. (HAZMAT Contractor)
  Accredited Laboratories, Inc. (Environmental Laboratory)

8.0 KEY PROJECT PERSONNEL

The following organizational chart identifies key project personnel responsible for the oversight and implementation of the Site Operations Plan.

- On-Scene Coordinator (OSC):
  Eric Wilson, USEPA Region II
  Phone: (732) 906-6991 Fax: (732) 906-6182

  The OSC shall be the designated authority having jurisdiction over the performance of work on the site and shall ensure compliance with the Order.

- Facility Coordinator:
  Timothy Francisco, Oxford Environmental, Inc.
  Phone: (973) 244-0600 Fax: (973) 244-0722

  The facility coordinator, on behalf of the Respondent (DSC of Newark Enterprises, Inc.), is responsible for the overall management, coordination and implementation of the Site Operations Plan. All references to Site Manager in the HASP shall be understood to mean the Facility Coordinator or his designee. All references to Project Leader within the HASP shall be understood to mean the contractor's supervisor.

9.0 SITE HEALTH & SAFETY PERSONNEL

Oxford Environmental, Inc. will be responsible for overall site health and safety monitoring and oversight during the installation of the soil cap, paving activities and associated subsurface construction activities (e.g. soil erosion and drainage control).

The following Oxford personnel are assigned to implement and enforce this HASP:

- Site Health & Safety Officer (HSO): William H. Bilgeshouse
  The Site Health and Safety Officer (HSO) has total responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. The Site HSO will be responsible for ensuring compliance with the provisions of the HASP, including, but not limited to site control and security, air monitoring, evaluation of personal protective equipment, appropriateness of respiratory protection, assessment of hazards, emergency notification, and decontamination. It is also the responsibility of the HSO to conduct site inspections on a regular basis in order to ensure the effectiveness of this plan. Changing field conditions may require decisions to be made concerning adequate protection programs.

- Health & Safety Manager (HSM): Scott M. Donnenberg, CSP
  The HSM will be responsible for conducting health and safety audits and provide technical consultation on health and safety issues and concerns that arise during the course of the project.

10.0 SITE CONTROL

An on-site command post shall be established on-site. The HSO shall coordinate site access and security on site. A safe perimeter will be established in all directions of the area of concern. No unauthorized persons shall be allowed within this area. The buddy system shall be employed during all field operations.

The prevailing wind conditions are variable and shall be assessed by the HSO on a daily basis prior to the performance of work activities. The Support Zone (clean area) and Contamination Reduction Zone (decontamination area) shall be located upwind from the Exclusion Zone (the contaminated area or Hot Zone.

Control boundaries shall be established and designated as follows:

Control Zone	***Control Boundary***	***Wind Direction***
Exclusion (Hot) Zone	Safety fencing / barricade (orange)	⇧
Contamination Reduction (Decontamination) Zone	Caution tape (yellow)	⇧
Support Zone (Field Office)	Traffic cones (safety orange)	⇧

All personnel arriving or departing the site shall log in and out with the record-keeper or HSO. All activities on site must be cleared through the Site Manager or EPA's OSC. All other visitors site shall check in with the Health and Safety Officer or Project Leader. Upon satisfactory presentation of credentials and training certifications, he/she shall log in and out with the record-keeper.

All activities of the visitor on site must be cleared through the Project Leader prior to commencing them. Any person found to be in violation of the HASP, poses a potential liability to the safety and welfare of personnel, the general public or the environmental, or as determined by the HSO/Site Manager shall be escorted off-site and shall not be allowed back on site under any circumstances.

11.0 WARNING SIGNS

The following warning sign shall be posted at all entrances to the site and at intervals along the proposed property boundary fence line.

DANGER
HAZARDOUS MATERIAL PRESENT
DO NOT ENTER
AUTHORIZED PERSONNEL ONLY

12.0 HAZARD ASSESSMENT

The following substance(s) are known or suspected to be present on site. The estimated concentration of contaminants to be encountered, the media in which those hazards exist, and the potential routes for exposure are also provided below:

Known or Suspected Contaminants Present On Site	*Route of Exposure, Health Hazard, Symptoms, and Exposure Limits*
Polychlorinated Biphenyls (PCBs, Chrolodiphenyl, Aroclor® 1254, Aroclor® 1248) CAS No. 11097-69-1	Hazard: Inhalation, Absorption (Skin), Ingestion, Contact (Skin and/or eye contact) Symptoms: Eye irritation, chloracne; liver damage; carcinogen NIOSH: 0.001 mg/m3 OSHA: 0.5 mg/m3

Lead (as Pb)	Hazard: Inhalation, Ingestion, Contact (Skin and/or eye contact) Symptoms: Weakness, fatigue insomnia, facial pallor, anorexia, malnutrition, constipation, abdominal pain, colic, anemia, gingival lead line, tremor, paralysis wrist/ankles, encelopathy, neoropathy, eye irritation, hypotension NIOSH: 0.100 mg/m3 OSHA: 0.05 mg/m3 IDLH: 1700 mg/m3
Arsenic (inorganic as As) CAS No. 7440-38-2	Hazard: Inhalation, Ingestion, Absorption (Skin), Contact (Skin and/or eye contact), carcinogen Symptoms: ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyper-pigmentation of skin NIOSH: 0.002 mg/m3 (15-min) OSHA: 0.010 mg/m3 IDLH: 100 mg/m3
Cadmium (dust) CAS No. 7440-43-9	Hazard: Inhalation, Ingestion, carcinogen Symptoms: pulmonary edema, dyspnea, cough, chest tightness, substernal pain, headaches, chills, muscle aches, nausea, vomiting, diarrhea, insomnia, emphysema, proteinuria, mild anemia NIOSH: lowest feasible conc. OSHA: 0.2 mg/m3, C 0.6 mg/m3 IDLH: 50 mg/m3
Chromium CAS No. 7440-47-3	Hazard: Inhalation, Ingestion Symptoms: histolilogic fibrosis of lungs NIOSH: 0.5 mg/m3 OSHA: 1.0 mg/m3 IDLH: not established

Copper CAS No. 7440-50-8	Hazard: Inhalation, Ingestion, Contact (Skin and/or eyes) Symptoms: irritation of nasal mucus membranes/pharynx, nasal perforation, eye irritation, metallic taste, dermatitis NIOSH/OSHA: 1.0 mg/m3 IDLH: not established
Mercury (metallic) CAS No. 7439-97-6	Hazard: Inhalation, Absorption (skin), Contact (Skin and/or eyes) Symptoms: cough, chest pain, dyspnea, bronchial pneuitis, tremor, insomnia, irritability, indecision, headaches, fatigue, weakness, stomatitis, salivation, gastrointestinal disturbance, anorexia, low weight, proteinuria, eye and skin irritation NIOSH/OSHA: 0.05 mg/m3 (skin) IDLH: 28 mg/m3
Silver (metal dust) CAS No. 7440-22-4	Hazard: Inhalation, Ingestion, Contact (Skin and/or eyes) Symptoms: blue-gray eyes, nasal septum, throat, skin; skin irritation, ulceration; gastrointestinal disturbance NIOSH/OSHA: 0.01 mg/m3 IDLH: not established
Zinc CAS No. 7440-66-6	Hazard: Inhalation Symptoms: sweet, metallic taste; dry throat, cough, chills, fever; tight chest, dyspnea, rales, reduced pulmonary function; headaches; blurred vision; muscle camps, low back pain; nausea,; vomiting; fatigue, malaise NIOSH/OSHA: 5 mg/m3; STEL 10 mg/m3 IDLH: not established

1,2-Dichloroethene CAS No. 156-60-5	Hazard: Inhalation, Ingestion, Contact (skin) Symptoms: irritation of eye, respiratory system; CNS depression NIOSH/OSHA: 200 ppm (790 mg/m3) IDLH: 4000 ppm
Trichloroethene CAS No. 79-01-6	Hazard: Inhalation, Ingestion, Contact (skin), carcinogen Symptoms: headaches, vertigo; visual disturbance, tremors, somnia, nausea, vomiting,; eye irritation; dermatitis; cardiac arryhthmias, paresthesia NIOSH: 25 ppm OSHA: 50 ppm (270 mg/m3), STEL 200 ppm (1080 mg/m3) IDLH: 1000 ppm

Source: NIOSH Pocket Guide to Chemical Hazards, 1990.

Additional hazards may be encountered on site, but have not been identified. When they are identified, a hazard assessment shall be performed for each substance. Hazardous substance information form(s) for the identified substance(s) are attached.

13.0 EMPLOYEE TRAINING

All personnel involved with on-site operations shall meet the following minimum requirements for training: initial OSHA 40-hour and annual 8-hour refresher Hazardous Waste Operations and Emergency Response training in accordance with 29 CFR 1910.120(e).

13.1 Project Personnel

The following table summarizes the training of project personnel.

Name	*Title/Function*	*Training*
Timothy Francisco	Facility Coordinator Project Manager	40-hour HAZWOPER 8-hour Site Supervisor
Gary Boyer	Project Engineer	40-hour HAZWOPER 8-hour Site Supervisor
Scott M. Donnenberg, CSP	Health & Safety Manager	40-hour HAZWOPER Worker 8-hour Site Supervisor Emergency Medical Technician

William H. Bilgeshouse	Project Superintendent/ Health & Safety Officer	40-hour HAZWOPER Worker HAZMAT First Responder

13.2 Other Personnel

1. General site workers (such as equipment operators, general laborers and supervisory personnel) engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards shall receive a minimum of 40 hours of instruction off the site, and a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor.

2. Workers on site only occasionally for a specific limited task (such as, but not limited to, ground water monitoring, land surveying, or geo-physical surveying) and who are unlikely to be exposed over permissible exposure limits and published exposure limits shall receive a minimum of 24 hours of instruction off the site, and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

3. Workers regularly on site who work in areas which have been monitored and fully characterized indicating that exposures are under permissible exposure limits and published exposure limits where respirators are not necessary, and the characterization indicates that there are no health hazards or the possibility of an emergency developing, shall receive a minimum of 24 hours of instruction off the site and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

4. Workers with 24 hours of training, and who become general site workers or who are required to wear respirators, shall have the additional 16 hours and two days of training necessary to total the training.

5. Management and supervisor training. On-site management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations shall receive 40 hours initial training, and three days of supervised field experience and at least eight additional hours of specialized training at the time of job assignment on such topics as, but not limited to, the employer's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques.

6. Qualifications for trainers. Trainers shall be qualified to instruct employees about the subject matter that is being presented in training. Such trainers shall have satisfactorily completed a training program for teaching the subjects they are expected to teach, or they shall have the academic credentials and instructional experience necessary for teaching the subjects. Instructors shall demonstrate competent instructional skills and knowledge of the applicable subject matter.

7. Training certification. Employees and supervisors that have received and successfully completed the training and field experience shall be certified by their instructor or the head instructor and trained supervisor as having successfully completed the necessary training. A written certificate shall be given to each person so certified. Any person who has not been

so certified or who does not meet the requirements shall be prohibited from engaging in hazardous waste operations.

8. Emergency response. Employees who are engaged in responding to hazardous emergency situations at hazardous waste clean-up sites that may expose them to hazardous substances shall be trained in how to respond to such expected emergencies.

9. Refresher training. Employees, managers and supervisors shall receive eight hours of refresher training annually, any critique of incidents that have occurred in the past year that can serve as training examples of related work, and other relevant topics.

10. Equivalent training. Employers who can show by documentation or certification that an employee's work experience and/or training has resulted in training equivalent to that training shall not be required to provide the initial training requirements of those paragraphs to such employees and shall provide a copy of the certification or documentation to the employee upon request. However, certified employees or employees with equivalent training new to a site shall receive appropriate, site specific training before site entry and have appropriate supervised field experience at the new site. Equivalent training includes any academic training or the training that existing employees might have already received from actual hazardous waste site work experience.

13.3 Subcontractors & Visitors

All subcontractors and their employees shall meet the minimum training requirements as set forth in 29 CFR 1010.120 (e), OSHA 40-hour Hazardous Waste Operations and Emergency Response. Authorized visitors shall also meet these training requirements. Evidence of training shall be submitted prior to commencement of site activities.

14.0 MEDICAL SURVEILLANCE

14.1 Applicability

Oxford Environmental, Inc. maintains a medical surveillance program in accordance with 29 CFR 1910.120 (f). The medical surveillance program has been instituted for:

1. All employees who are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or, if there is no permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;

2. All employees who wear a respirator for 30 days or more a year or as required by 29 CFR 1910.134;

3. All employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation; and

4. Members of HAZMAT teams.

Note: Organizations and entities involved in the project shall be responsible for maintaining medical surveillance program for their employees.

14.2 Frequency Of Medical Examinations

Medical examinations and consultations shall be made available to each employee covered under the medical surveillance program on the following schedules:

1. Prior to assignment;

2. At least once every twelve months for each employee covered unless the attending physician believes a longer interval (not greater than biennially) is appropriate;

3. At termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months;

4. As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation;

5. At more frequent times, if the examining physician determines that an increased frequency of examination is medically necessary.

14.3 Examinations For Injury Or Exposure

For employees who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used:

1. As soon as possible following the emergency incident or development of signs or symptoms;

2. At additional times, if the examining physician determines that follow-up examinations or consultations are medically necessary.

14.4 Content Of Medical Examinations And Consultations.

1. Medical examinations include a medical and work history (or updated history if one is in the employee's file) with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site.

2. The content of medical examinations or consultations made available to employees shall be determined by the attending physician. The guidelines in the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities shall be consulted.

3. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine, and shall be provided without cost the employee, without loss of pay, and at a reasonable time and place.

4. Information provided to the physician. The employer shall provide one copy of the standard and its appendices to the attending physician, and in addition the following for each employee:

   (i) A description of the employee's duties as they relate to the employee's exposures.
   (ii) The employee's exposure levels or anticipated exposure levels.
   (iii) A description of any personal protective equipment used or to be used.
   (iv) Information from previous medical examinations of the employee which is not readily available to the examining physician.
   (v) Information required by 29 CFR 1910.134.

14.5 Physician's Written Opinion

Oxford shall obtain and furnish the employee with a copy of a written opinion from the attending physician containing the following:

1. The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use.

2. The physician's recommended limitations upon the employee's assigned work.

3. The results of the medical examination and tests if requested by the employee.

4. A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

The written opinion shall not reveal specific findings or diagnoses unrelated to occupational exposures.

14.6 Recordkeeping

An accurate record of the medical surveillance shall be retained. This record shall be retained for the period specified and meet the criteria of 29 CFR 1910.20. The records shall include at least the following information:

1. The name and social security number of the employee;

2. Physician's written opinions, recommended limitations, and results of examinations and tests;

3. Any employee medical complaints related to exposure to hazardous substances;

4. A copy of the information provided to the examining physician by the employer, with the exception of the standard and its appendices.

The records shall be retained for a period of employment and as specified in 29 CFR 1910.20.

15.0 PERSONAL PROTECTIVE EQUIPMENT

The type of protective equipment recommended for this project has been based on the preliminary evaluation of environmental studies and prior experience with projects of the same type. Any changes or revisions of the recommended personal protective measures shall be by Oxford's Certified Safety Professional (CSP), his designated representative or the Health & Safety Officer.

The following prescribes a personal protection plan when possible exposure to hazardous materials exists. Workers involved with hazardous materials shall be assigned personal protective equipment and proper instruction on its proper use and maintenance.

Personnel who handle material known to be hazardous, or of unknown toxicity are required to take sufficient precautions. It is the responsibility of the designated Health and Safety Officer (HSO) to specify the correct level of protective equipment to be used on the job. All field personnel shall receive training in the proper use and methods of wearing protective equipment. The level of protective equipment is determined by the types and levels of material present at the site. These levels are determined through specific knowledge of the hazardous materials and air monitoring as described in this Plan.

16.0 SITE SPECIFIC LEVEL OF PROTECTION

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Location	*Job Functions*	*Recommended Level of Protection*
Exclusion Zone	Drum Stabilization, Sampling, and Characterization.	Level A☐ Level B☒ Level C☐ Modified Level D☐ • For each specific task, conduct continuous monitoring and utilize recommended level of protection. • Once it is established that airborne concentrations of contaminants are undetectable or below the action level, downgrade PPE to Level C. • If real time air monitoring indicates any detectable airborne organic vapors, dust levels above the action level or IDLH conditions, upgrade PPE as directed by HSO.
Contamination Reduction Zone	Decontamination (Personnel and Equipment) Sample Management	Level A☐ Level B☐ Level C☒ Modified Level D☐ • Conduct real time monitoring as indicated in the monitoring schedule. • If airborne contaminant concentrations exceed the Action Levels, evaluate the scope of work, work procedures, and/or engineering controls to minimize airborne concentrations. • If airborne contaminant concentrations exceed the OSHA Permissible Exposure Limits (PELs), upgrade PPE as directed by HSO, in consultation with the HSM.

Support Zone	Mobilization Demobilization Deliveries Office Trailer Break Areas	Level A ☐ Level B☐ Level C☐ Modified Level D☒ • Conduct real-time monitoring as indicated in the monitoring schedule. • In the event, airborne contaminant concentrations are detectable, the HSO, in consultation with the HSM, take precautionary measures to evacuate the zone, isolate the area, determine the source, and take appropriate measures to eliminate the source. • Under no circumstances shall the Support Zone be occupied until cleared by the HSO.

16.1 Specified Protective Equipment

Based on the information gathered from previous site investigations and analytical data, the following site specific protective equipment is provided as the minimum recommended level of protection to be utilized on site.

Modified Level C	*Level C*
• Hard hat • Safety glasses/goggles • Nitrile gloves (outer) • Latex gloves (inner) • Tyvek or splash apron • Disposable booties (chemical resistant) • Splash aprons is recommended when handling contaminated water or equipment. • Full-face air purifying respirator (on-hand)	• Hard hat • Safety glasses/goggles • Nitrile gloves (outer) • Latex gloves (inner) • Full-face air purifying respirator • Tyvek or splash apron • Disposable booties (chemical resistant) • Splash aprons is recommended when handling contaminated water or equipment.

Important: Changes to the above levels of protection shall be made by the HSO and Project Leader.

16.2 Changing Field Conditions

In the event of changing field conditions, including, but not limited to new work tasks, uncharacterized work areas, adverse weather conditions, or elevated airborne concentrations of

contaminants from air monitoring data, continuous monitoring shall be implemented. If the action levels are reached or exceeded, Level B personal protective equipment shall be instituted. If the permissible exposure limits are reached or exceeded, reevaluate the situation and take appropriate measures to minimize airborne concentrations.

17.0 SITE MONITORING

17.1 Monitoring Objectives

Health and safety (H&S) monitoring will be conducted on the site during all field activities to accomplish the following objectives:

1. To ensure proper selection of personal protective equipment;

2. To delineate areas where personal protection is needed;

3. To evaluate the potential health effects of exposure to contaminants; and

4. To protect and safeguard the health and safety of the workers, the general public and the environment.

17.2 Exposure Monitoring

1. Monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

2. Air monitoring shall be used to identify and quantify airborne levels of hazardous substances and safety and health hazards in order to determine the appropriate level of employee protection needed on site.

17.3 Initial Entry

Upon initial entry, representative air monitoring shall be conducted to identify and IDLH condition, exposure over permissible exposure limits or published exposure levels, exposure over a radioactive material's dose limits or other dangerous condition such as the presence of flammable atmospheres or oxygen-deficient environments.

17.4 Periodic Monitoring

Periodic monitoring shall be conducted when the possibility of an IDLH condition or flammable atmosphere has developed or when there is indication that exposures may have risen over permissible exposure limits or published exposure levels since prior monitoring. Situations where it shall be considered whether the possibility that exposures have risen are as follows:

(i) When work begins on a different portion of the site.

(ii) When contaminants other than those previously identified are being handled.
(iii) When a different type of operation is initiated (e.g., drum opening as opposed to exploratory well drilling).
(iv) When employees are handling leaking drums or containers or working in areas with obvious liquid contamination (e.g., a spill or lagoon).

17.5 Monitoring of High-Risk Employees

After the actual clean-up phase of any hazardous waste operation commences (for example, when soil, surface water or containers are moved or disturbed), Oxford will monitor those employees likely to have the highest exposures to hazardous substances and health hazards likely to be present above permissible exposure limits or published exposure levels by using personal sampling frequently enough to characterize employee exposures.

If the employees likely to have the highest exposure are over permissible exposure limits or published exposure limits, then monitoring shall continue to determine all employees likely to be above those limits.

Oxford may utilize a representative sampling approach by documenting that the employees and target chemicals chosen for monitoring are based on the criteria stated above.

18.0 MONITORING INSTRUMENTATION

Direct reading instruments will be used to give instantaneous information concerning levels of contaminants. These shall include but are not limited to:

1. Combustible gas/oxygen detector for detection of flammable or explosive atmospheres and oxygen deficiency;

2. Organic vapor meter (OVM) or photoionization detector (PID) for organic vapors, specifically *1,2-Dichloethene and Trichloroethene.*

3. Detector tubes for monitoring specific air contaminants; and

4. Respirable dust monitor for total nuisance and toxic dusts.

All field screening and monitoring devices shall be operated by a qualified individual knowledgeable about the instrument's operating principles and limitations.

19.0 MONITORING SCHEDULE

The above monitoring instruments shall be used on site at the specified intervals and locations:

Monitoring Instrument	*Exclusion Zone*	*Contamination Reduction Zone*	*Support Zone*
Combustible Gas Indicator/ Oxygen Monitor	Continuous	Continuous	Continuous
Detector Tubes	Daily	Daily	Daily
OVM/PID	Continuous	Continuous	Hourly
Respirable Dust Monitor	Continuous	Continuous	Hourly
Personal Air Sampling	Hourly	Hourly	Hourly

19.1 Action Levels

Exceeding the following Action Levels (AL) will require the re-evaluation of potential hazards, engineering controls, personal protective equipment, or work procedures by the HSO, and the appropriate response to be taken.

Hazard	*Action Level*	*Response*
Flammability Combustibility	10% of LEL	stop work, evacuate work area, determine source if possible; ventilate area, re-occupy as directed by HSO
Oxygen Deficiency	< 19.5%	stop work, evacuate area; wait until oxygen content is greater than 19.5%
Organic Vapors (instrument calibrated to Methane)	0.1 ppm	stop work, determine source if possible; if detectable re-assess personal protective equipment
Total Nuisance Dust (incl. heavy metals)	2.5 mg/m^3	stop work, determine source if possible; if detectable re-assess PPE.

20.0 DUST MONITORING

Dust monitoring shall be performed using direct-reading respirable dust monitor (GCA Miniram) and OSHA/NIOSH approved air sampling methods via air filter for laboratory analysis. Due to the presence of several contaminants, the following table of calculated exposure limits shall be utilized to determine exposure limits:

Site Contaminants	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)	Soil $Conc._{max}$ (ppm)	$Conc._n/El_n$ (ppm)
PCBs	0.5	0.001	22000	44000
Lead	0.05	0.1	340	6800
Cadmium	0.005	0.0025	19	3800
			Total	54600

Calculating the Exposure Limit of Mixture* :

$$EL_{mix} = \frac{(10^6 \text{ mg/kg}) / \text{Safety Factor})}{(conc_1/EL_1 + conc_2 + EL_2 + \ldots conc_n/El_n)}$$

$$EL_{mix} = \frac{10^6 \text{ mg/kg} / \quad 4}{54600} = 4.58 \text{ mg/m}^3$$

Therefore the site-specific exposure limit to contaminated soil/dust is ***5 mg/m³***

20.1 Action Levels

Due to the proximity of work areas to occupied businesses and residences, dust control measures will be implemented during all construction activities. If dust observed migrating from work areas to neighboring residential or commercial areas or to occupied buildings within the industrial park, work will stop and dust control measures will be implemented. Work will continue upon satisfactory implementation of dust control measures.

To ensure that dust control measures are implemented when required, dust monitoring shall be conducted continuously in the immediate areas of construction and at perimeter locations downwind of the work areas. When dust monitor readings reach or exceed **an action level of 2.5 mg/m³** for total nuisance dust, work shall immediately stop and the above dust control measures implemented. Work shall continue upon satisfactory implementation of dust control measures and dust monitor readings are below the action level.

20.2 Corrective Measures

In the event that the dust monitor indicate readings equal to or greater than the action level, work shall immediately cease and the HSO shall reevaluate the work procedures, engineering

* Establishing Exposure Limits and Selecting Levels of Protection for Hazardous Waste Projects. Marlowe, Christopher S. E., CD Federal Programs Corporation, Fairfax, Virginia.

controls, and implement dust control measures until dust readings are consistently below the action level.

21.0 UNKNOWN HAZARDS

In all situations where the types of potentially hazardous waste material is unknown, maximum protection levels are maintained until the hazards can be adequately assessed. A decision to downgrade or upgrade the level of personnel protection by the HSO will be based on:

1. Readings from real time monitoring instrumentation (i.e. explosimeter, organic vapor analyzer, toxic gas monitor)

2. Visual observations such as stressed vegetation, wind, dust, temperatures, discoloration of soils, evidence of leaking drums, product vessels.

3. Sensory observations such as odors and fumes

4. Specific information of the known chemical contaminants (i.e. low flash point, reactivity)

22.0 COMMUNICATIONS PROCEDURES

22.1 Buddy System

The buddy system shall be utilized when respiratory protection is in use. Line of sight will be established during all other operations.

22.2 Hand Signals

- thumbs up with motion ..... lift up
- thumbs down ..... no good, try again
- point left ..... move this way, follow me
- point right ..... move this way, follow me
- point up with circling motion ..... lift up
- one hand open ..... stop
- ..... both hands open with back up
- point down ..... wait here or pour here
- fore finger and index finger up ..... pause, wait a minute
- thumb and fore finger touching ..... okay

22.3 Radio Communications

Channel (TBD) has been designated as the radio frequency for personnel in the Exclusion Zone. All other on-site communications will use channel (TBD).

Personal in the Exclusion Zone should remain in constant radio communication or within sight of the Project Leader. Any failure of radio communication requires an evaluation of whether personnel should leave the Exclusion Zone.

23.0 DECONTAMINATION

Decontamination procedures ensure that personnel or equipment in the contamination zone do not spread or carry hazardous materials into the decontamination zone. The procedures will be revised whenever the type of personal protective clothing or equipment changes, the site conditions change, or the site hazards are reassessed based on new information.

23.1 Designated Decontamination Area

Decontamination areas shall be established prior to the commencement of any site activities, without exception. All site personnel shall review and be oriented to site-specific safety, work practices, decontamination and emergency procedures prior to entering the Exclusion Zone. A designated area will be established for personnel decontamination and equipment decontamination. Personnel and equipment decontamination should be separated by no less than 25 feet or as designated by the HSO. The equipment decontamination area should be downwind of the personnel decontamination area.

23.2 Personnel Decontamination

All workers entering the exclusion, contamination reduction zones shall employ the correct procedures for decontamination and for changing from contaminated clothing to clean clothing as described below:

Station	*Type*	*Decontamination Procedure*
1	Plastic sheet placed on ground downwind of personnel decontamination stations.	Field Equipment - Drop field equipment (sampling equipment, instruments and samples) on sheet.
2	A wash tub equipped with large brush filled with a decontamination solution (soap and water).	Outer Garments - Use scrub brush to remove gross contamination.
3	A second wash tub filled with rinse solution ("clean" water).	Outer Garments - Rinse off decontamination solution.
4	A third wash tub equipped with large brush filled with decontamination solution (soap and water).	Outer Garments - Use scrub brush to remove gross contamination.

5	A fourth wash tub filled with rinse solution ("clean" water).	Outer Garments - Final rinse decontamination solution from outer garments with clean water.
6	Two buckets filled with decontamination solution (soap and water)	Boots and Gloves - Use scrub brush and decontamination solution to remove all gross contamination.
7	One bucket filled with rinse solution ("clean" water)	Boots and Gloves - Rinse decontamination from boots and gloves with clean water.
8	A trash can with plastic liner	Disposable Items - Remove disposable items such as gloves, boots, Tyvek suits in trash can.
9	Plastic sheet on ground	Respirators - Drop respiratory equipment on plastic sheet for decontamination.
10	Trash can with plastic liner	Clothing - Place any clothing items used under protective clothing in plastic lined trash can and don clean street clothing.

23.3 Equipment Decontamination

All equipment brought into the exclusion and contamination reduction zones shall be decontaminated using the following procedures:

Station	*Type*	*Decontamination Procedure*
1	Plastic sheet placed on ground downwind of personnel decontamination stations.	Field Equipment - Drop field equipment (sampling equipment, instruments and samples) on sheet.
2	A wash tub equipped with large brush filled with a decontamination solution (soap and water).	Soap wash and rinse, solvent rinse, if necessary.
3	Decontamination pad equipped with water hose, brushes and steam cleaning equipment.	Vehicles - Steam clean heavy equipment, if necessary.

23.4 General Procedures

1. Decon wash water for the activities outlined in this plan will be collected for disposal.

2. Disposable clothing or other equipment that is permanently contaminated will be placed in drums for disposal.

3. Decontamination solutions may vary based on the exact constituents of the contaminants. Also, the extent to which the decontamination is carried out may be modified to address particular contaminants or situations.

4. Personnel assisting with decontamination will be in Level C protection unless air monitoring or other information requires a higher level of protection.

5. In extreme situations when there may be a question as to the degree of contamination known or substances of a highly toxic nature are suspected, protective clothing will be discarded after use of tested decontamination.

6. All decontamination methods are assessed by the HSO at the beginning of a program and reviewed periodically throughout the lifetime of the program for its effectiveness.

23.5 Decontamination Waste - Testing and Disposal

1. Wastes consisting of decontamination fluids, sediments and protective clothing shall be placed in approved containers and a representative sample collected for waste characterization (via TCLP).

2. Waste streams found to exceed the acceptable TCLP levels shall be disposed at an approved facility in accordance with EPA and NJDEP regulations.

3. Waste characterization shall include analysis for PCBs by USEPA SW846, Method 8080.

24.0 EMERGENCY RESPONSE PLAN

24.1 Emergency Notification List

In the event of an emergency, the designated HSO shall for direct and coordinate notification of the appropriate emergency entity listed in the table below.

Agency/Facility	Phone
Police	911
Fire / HAZMAT	911
EMS/Ambulance	911
Poison Control Center	800-764-7661
EPA Region II 24-Hour Hotline	908-548-8730
NJ Department of Environmental Protection Hotline	609-292-7172

The HSO will immediately inform the Project Leader of any emergency situations, health & safety recommendations, and any pertinent issues. If the HSO is not on-site, the above list shall be used to notify of the incident. The HSO shall then be notified at (800) 377-8218 after notifying the appropriate emergency entity.

24.2 Emergency Communications

In the event of an emergency and failure of radio communications, the following air horn signals shall be used:

three intermittent short blasts .....leave the exclusion zone
two short blasts ..... emergency, need help
one long blast .....all clear signal

25.0 CONTINGENCY PLAN

Every remedial/removal action project is posed with the threat of a possible spill of hazardous materials. For this reason, the following requirements are requisite during all operations:

1. In an emergency situation, the HSO or supervision personnel shall implement an emergency contingency plan by assessing the nature of the emergency, notifying appropriate emergency response agency above, and if possible, stabilizing the situation until help arrives.

2. The HSO will coordinate/designate an on-site emergency response team composed of qualified on-site personnel created for specific emergency purposes, such as decontamination, rescue, and entry.

3. Off-site rescue teams (i.e. local HAZMAT) shall be used during particularly dangerous emergency operations, and emergencies beyond the capability of the on-site emergency response team.

26.0 SPILL CONTROL PLAN

The best "emergency spill plan" is planning to avoid and prevent spills. All field procedures will be performed with spill prevention as a key factor. In the event of accidental spillage, the following spill response procedures shall be initiated by on-site personnel if is can be performed safely.

1. First Aid will be administered to injured/contaminated persons. Any employee observing a spill will act immediately to remove and/or protect injured/contaminated persons from any life-threatening situation. First Aid and/or decontamination procedures will be implemented as appropriate.

2. Warn unsuspecting persons/ vehicles of the hazard. Personnel will act to prevent any unsuspecting persons from coming in contact with spilled materials by alerting other nearby persons and by obtaining assistance of other personnel who are familiar with spill control and cleanup techniques.

3. Stop the spill at the source, if possible. Without taking unnecessary risks, personnel will attempt to stop the spill at the source. Personnel will not expend more than a brief effort prior to notifying the Engineer.

4. Utilizing available personal radio communications or other rapid communication procedures, the Engineer will be notified of the spill, including information on material spilled, quantity, personnel injuries, and immediate life-threatening hazards.

5. Spill assessment and primary containment. The Project Leader will make a rapid assessment of the spill and direct primary containment measures which may include, but are not limited to: (i) construction of a temporary containment berm utilizing on-site clay absorbent, earth or absorbent pads or booms; and (ii) digging a sump, installing a polyethylene liner and diverting the spilled material to the sump.

6. Spill clean-up. Personnel will cleanup all spills following the spill clean-up plan developed by the Project Leader. The Project Leader will supervise the spill clean-up. Most equipment, materials, and supplies necessary to clean up a spill will already be immediately available on site. Such items may include, but are not limited to: front-end loader, shovels, rakes, clay absorbent, polyethylene, personal safety equipment (respirators, gloves, boots, protective coveralls, hard hats, eye shields), steel drums, pumps, and miscellaneous hand tools.

7. Spill clean-up inspection. The Project Leader will inspect the spill site to determine that the spill has been cleaned up. If necessary, soil water or air samples may be taken and analyzed to demonstrate the effectiveness of the spill clean up effort.

8. Identify the cause of the spill and remedial action to prevent recurrence. The Project Leader will determine the cause of the spill and will determine remedial steps to ensure that recurrence is prevented.

27.0 EMERGENCY MEDICAL CARE

First-aid equipment is available on site at the following locations:

First-aid kit ..... Decontamination Zone
Emergency eye wash ..... Decontamination Zone
Emergency shower ..... Decontamination Zone

28.0 STANDARD EMERGENCY PROCEDURES

The following standard emergency procedures (should be modified as required for incidents) will be used by on site personnel. The Site Safety Officer shall be notified of any on-site emergencies and shall be responsible for ensuring that the appropriate procedures are followed.

28.1 Personnel Injury In The Exclusion Zone

1. Upon notification of an injury in the Exclusion Zone, the designated emergency signal shall be sounded.

2. All site personnel shall assemble at the decontamination line.

3. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline.

4. The Site HSO and Project Team Leader should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone.

5. The on-site First Aider shall initiate the appropriate first-aid; contact should be made for an ambulance and notify the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

28.2 Personnel Injury In The Support/Decontamination Zone

1. Upon notification of an injury in the Support Zone, the Project Team Leader and Site HSO will assess the nature of the injury.

2. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the on-site First Aider initiating the appropriate first-aid and necessary follow-up as stated above.

3. If the injury increases the risk to others, the designated emergency signal shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

28.3 Fire/Explosion

1. Upon notification of a fire or explosion on site, the designated emergency signal shall be sounded and all site personnel shall be assembled at the decontamination line.

2. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

28.4 Equipment Failure

1. If any site worker experiences a failure or alteration of personal protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

2. If any other equipment on site fails to operate properly, the Project Leader and HSO shall be notified and than determine the effect of this failure on continuing operations on site.

3. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

29.0 EMERGENCY EGRESS AND EVACUATION

The following emergency escape routes are designated for use in those situations where egress from the Exclusion Zone cannot occur through the decontamination line:

IMPORTANT: In the event of an emergency, the egress route shall be any area immediately and safely accessible by site personnel. Decontamination procedures may be circumvented in an emergency situation.

In all situations, when an on-site emergency results in evacuation of the Exclusion Zone, personnel shall not reenter until:

1. The conditions resulting in the emergency have been corrected.

2. The hazards have been reassessed.

3. The HASP has been reviewed.

4. Site personnel have been briefed on any changes in the HASP.

30.0 DEFINITIONS

"Buddy system" means a system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

"Clean-up operation" means an operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared-up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment.

"Decontamination" means the removal of hazardous substances from employees and their equipment to the extent necessary to preclude the occurrence of foreseeable adverse health affects.

"Emergency response" or "responding to emergencies" means a response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance. Responses to incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency responses within the scope of this standard. Responses to releases of hazardous substances where there is no potential safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be emergency responses.

"Facility" means (A) any building, structure, installation, equipment ,pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any water-borne vessel.

"Hazardous materials response (HAZMAT) team" means an organized group of employees, designated by the employer, who are expected to perform work to handle and control actual or potential leaks or spills of hazardous substances requiring possible close approach to the substance. The team members perform responses to releases or potential releases of hazardous substances for the purpose of control or stabilization of the incident. A HAZMAT team is not a fire brigade nor is a typical fire brigade a HAZMAT team. A HAZMAT team, however, may be a separate component of a fire brigade or fire department.

"Hazardous substance" means any substance designated or listed under paragraphs (A) through (D) of this definition, exposure to which results or may result in adverse affects on the health or safety of employees;

(A) Any substance defined under section 101(14) of CERCLA;

(B) Any biological agent and other disease-causing agent which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, either directly from the

environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring;

(C) Any substance listed by the U.S. Department of Transportation as hazardous materials under 49 CFR 172.101 and appendices; and

(D) Hazardous waste as herein defined.

"Hazardous waste" means

(A) A waste or combination of wastes as defined in 40 CFR 261.3, or

(B) Those substances defined as hazardous wastes in 49 CFR 171.8.

"Hazardous waste operation" means any operation conducted within the scope of this standard.

"Hazardous waste site" or "Site" means any facility or location within the scope of this standard at which hazardous waste operations take place.

"Health hazard" means a chemical, mixture of chemicals or a pathogen for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, heptatoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. It also includes stress due to temperature extremes. Further definition of the terms used above can be found in Appendix A to 29 CFR 1910.1200.

"IDLH" or "Immediately dangerous to life or health" means an atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.

"Oxygen deficiency" means that concentration of oxygen by volume below which atmosphere supplying respiratory protection must be provided. It exists in atmospheres where the percentage of oxygen by volume is less than 19.5 percent oxygen.

"Permissible exposure limit" means the exposure, inhalation or dermal permissible exposure limit specified in 29 CFR Part 1910, Subparts G and Z.

"Published exposure level" means the exposure limits published in "NIOSH Recommendations for Occupational Health Standards" dated 1986 incorporated by reference, or if none is specified, the exposure limits published in the standards specified by the American Conference of Governmental Industrial Hygienists in their publication "Threshold Limit Values and Biological Exposure Indices for 1987-88" dated 1987 incorporated by reference.

"Post emergency response" means that portion of an emergency response performed after the immediate threat of a release has been stabilized or eliminated and clean-up of the site has begun.

If post emergency response is performed by an employer's own employees who were part of the initial emergency response, it is considered to be part of the initial response and not post emergency response. However, if a group of an employer's own employees, separate from the group providing initial response, performs the clean-up operation, then the separate group of employees would be considered to be performing post-emergency response and subject to paragraph (q)(11) of this section.

"Qualified person" means a person with specific training, knowledge and experience in the area for which the person has the responsibility and the authority to control.

"Site safety and health supervisor (or official)" means the individual located on a hazardous waste site who is responsible to the employer and has the authority and knowledge necessary to implement the site safety and health plan and verify compliance with applicable safety and health requirements.

"Small quantity generator" means a generator of hazardous wastes who in any calendar month generates no more than 1,000 kilograms (2,205 pounds) of hazardous waste in that month.

"Uncontrolled hazardous waste site," means an area identified as an uncontrolled hazardous waste site by a governmental body, whether Federal, state, local or other where an accumulation of hazardous substances creates a threat to the health and safety of individuals or the environment or both. Some sites are found on public lands such as those created by former municipal, county or state landfills where illegal or poorly managed waste disposal has taken place. Other sites are found on private property, often belonging to generators or former generators of hazardous substance wastes. Examples of such sites include, but are not limited to, surface impoundments, landfills, dumps, and tank or drum farms. Normal operations at TSD sites are not covered by this definition.

Table 1 - Personal Protective Equipment

Personal protective equipment to protect the body against contact with known or anticipated hazardous substances or chemicals is divided into four categories:

1. *Level A* protection will be worn when the highest level of respiratory skin, eye, and mucous membrane protection is needed.

    a. Pressure demand, self contained breathing apparatus.
    b. Fully-encapsulating chemical resistant suit.
    c. Gloves, inner, chemical resistant
    d. Gloves, outer, chemical resistant.
    e. Boots, chemical resistant depending on suit boot construction, worn over or under suit boot.
    f. Hard hat (under suit).
    g. Coveralls (under suit).
    h. Two-way radio communications (intrinsically safe).
    i. Protective footwear.

2. *Level B* protection will be selected when the highest level of respiratory protection is needed, but a lesser level of skin and eye protection. Level B protection is the minimum level recommended on the initial site entries until the hazards have been further identified and defined by monitoring, sampling, and other reliable methods of analysis, and personnel equipment corresponding with those findings utilized.

    a. Pressure-demand self contained breathing apparatus; Chemical resistant clothing (overalls and long sleeved.
    b. jacket, coveralls, hooded two piece splash suit, disposable chemical resistant coveralls).
    c. Coveralls (under splash suit).
    d. Gloves, outer, chemical resistant.
    e. Gloves, inner, chemical resistant.
    f. Boots, outer, chemical resistant.
    g. Two-way radio communications (intrinsically safe).
    h. Hard hat.
    i. Protective footwear.

3. *Level C* protection will be selected when the type of airborne substance is known, concentration measured, criteria for using air-purifying respirators met, and skin and eye exposure is unlikely. Periodic monitoring of the air must be performed.

    a. Full-face, air-purifying respirator (MSHA/NIOSH approved).
    b. Chemical resistant clothing (one piece coverall, hooded two piece chemical) splash suit, chemical resistant hood and apron, disposable chemical resistant coveralls.)
    c. Gloves, outer, chemical resistant. –Gloves, inner, chemical resistant. –Boots, chemical resistant.
    d. Cloth coveralls (inside chemical protective clothing). –Two-way radio communications (intrinsically safe).

e. Hard hat.
f. Escape mask (optional).
g. Protective footwear.

4. *Level D* is primarily a work uniform. It will not be worn on any site where respiratory or skin hazards exist.

a. Gloves, outer, chemical resistant.
b. Gloves, inner, chemical resistant.
c. Boots, chemical resistant.
d. Safety glasses.
e. Hard Hat.
f. Protective footwear.

Table 2 - Respiratory Protection Guide

The respiratory protection guide has been prepared in accordance with OSHA 29 CFR Part 1910.134 which specifies that respirators be selected on the basis of the hazards to which workers may be exposed. The American National Standards Institute (ANSI) Z88.2-1980 standard on respiratory practice can be reference for further guidance.

The type of atmospheric concentration of substances need to be identified and may require different level of respiratory protection and skin protection. The following criteria is provided for each level of protection. Selection of the proper personal protection involves meeting one or more criteria.

Level B Protection

1. Atmospheric environments with IDLH concentrations of specific substances that do not represent a skin absorption hazard;
2. Atmospheric environments or airborne contaminant concentrations that do not meet the criteria for use of air-purifying respirators;
3. Atmospheres that contain less that 19.5 percent oxygen;
4. Atmospheric environments with the presence of unknown vapors or gases as indicated by direct-reading organic vapor detection instrument, but vapors and gases that are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through intact skin.

Level C Protection

1. Airborne contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin;
2. Air contaminants have been identified, concentrations measured, and an appropriate respirator canister is available that can remove the contaminant;
3. All criteria for the use of air-purifying respirators are met.

Level D Protection

1. The atmosphere contains no known hazard;
2. Work, functions preclude splashes, immersion, or the potential unexpected inhalation of or contact with hazardous levels of any chemicals.
3. Hazard assessment which initially determines the level of protection to be worn by all personnel will be checked and documented by monitoring procedures.
4. The level of protection depends on the toxicity of chemicals onsite, their concentration in the air, potential for skin contact, flammability characteristics, and general waste site conditions (such as ambient temperature, topography, accessibility, etc.).

General Considerations

- Atmospheres that are oxygen deficient (less that 19.5% 0_2)or immediately dangerous to life and health (IDLH)–producing an immediate irreversible or effect on health.

- Atmospheres that may contain high concentrations of unknown levels exceeding the Threshold Limit Values (TLV) for known airborne chemicals, (but are not considered to be Immediately Dangerous to Life and Health (IDLH) conditions).
- Atmospheres in which the airborne concentrations of all contaminants is known to be less than 50X the respective ACGIH TLVs and provide good warning properties (taste, smell, and irritation)
- Emergency escape.
- Potential splash of liquid irritant to chest or facial area (full-face respirator not otherwise specified).
- General eye protection while on waste site.
- Emergency rescue.

Respiratory Protection Selection

Final selection of respirators is based on the following criteria:

a. Nature of the situation encountered;
b. Activities of workers in the hazardous area;
c. Type of inhalation hazard including physical properties, physiological effects on the body, warning properties (e.g., small or irritation) air borne contaminant concentration, established TLVs for toxic materials and established IDLH concentration of toxic material;
d. Location of hazardous area in relation to nearest source of acceptable air supply;
e. Duration of respirator use.

Air-purifying respirators can be used in atmospheres that contain adequate oxygen (19.5% or more) contaminated with chemicals that have good warning properties (taste, smell, irritation) and are not immediately dangerous to life and health. When air purifying respirators are utilized the TLV of the contaminant and the protection factor of the mask are used to determine the maximum use limit of cartridge respirator. As a standard practice, cartridges are changed daily.

Fit-Testing

Oxford requires all employees who may use a respirator to go through qualitative fit-testing.

The following policies are also adhered to in the fitting and use of the respirators:

1. An employee must have passed the fit test.
2. Facial hair, such as beards, sideburns, or certain mustaches that may interfere with the fit test, are not allowed.
3. Persons requiring corrective lenses are provided with specially mounted lenses inside the full-face mask. Under no circumstances may contact lenses and/or glasses be worn while using full-face respirators.

Respirator training is conducted during annual or initial health and safety training. Instruction is given the proper cleaning of respirators, the respirators' capabilities and limitations.

END OF SECTION

31.0 ACKNOWLEDGEMENT

ALL SITE PERSONNEL HAVE READ THE ABOVE PLAN AND ATTACHED SAFETY AND HYGIENE RULES AND ARE FAMILIAR WITH ITS PROVISIONS.

I certify that I have read the Health & Safety Plan, its content, and limitations and agree to abide by the procedures discussed herein to ensure the health and safety of the project personnel and the general public. I further certify that I have received the proper training as set forth in 29 CFR 1910.120 and recognize that toxic and hazardous materials may exist on the site.

AFFILIATION	PRINT NAME	JOB FUNCTION	SIGNATURE	DATE

SAFETY & HYGIENE RULES

The following list of standing orders shall be enforced in the Exclusion Zone and Contamination Reduction/Decontamination Zone.

1) No smoking, eating, or drinking in these zones.

2) No horseplay.

3) No matches or lighters in this zone.

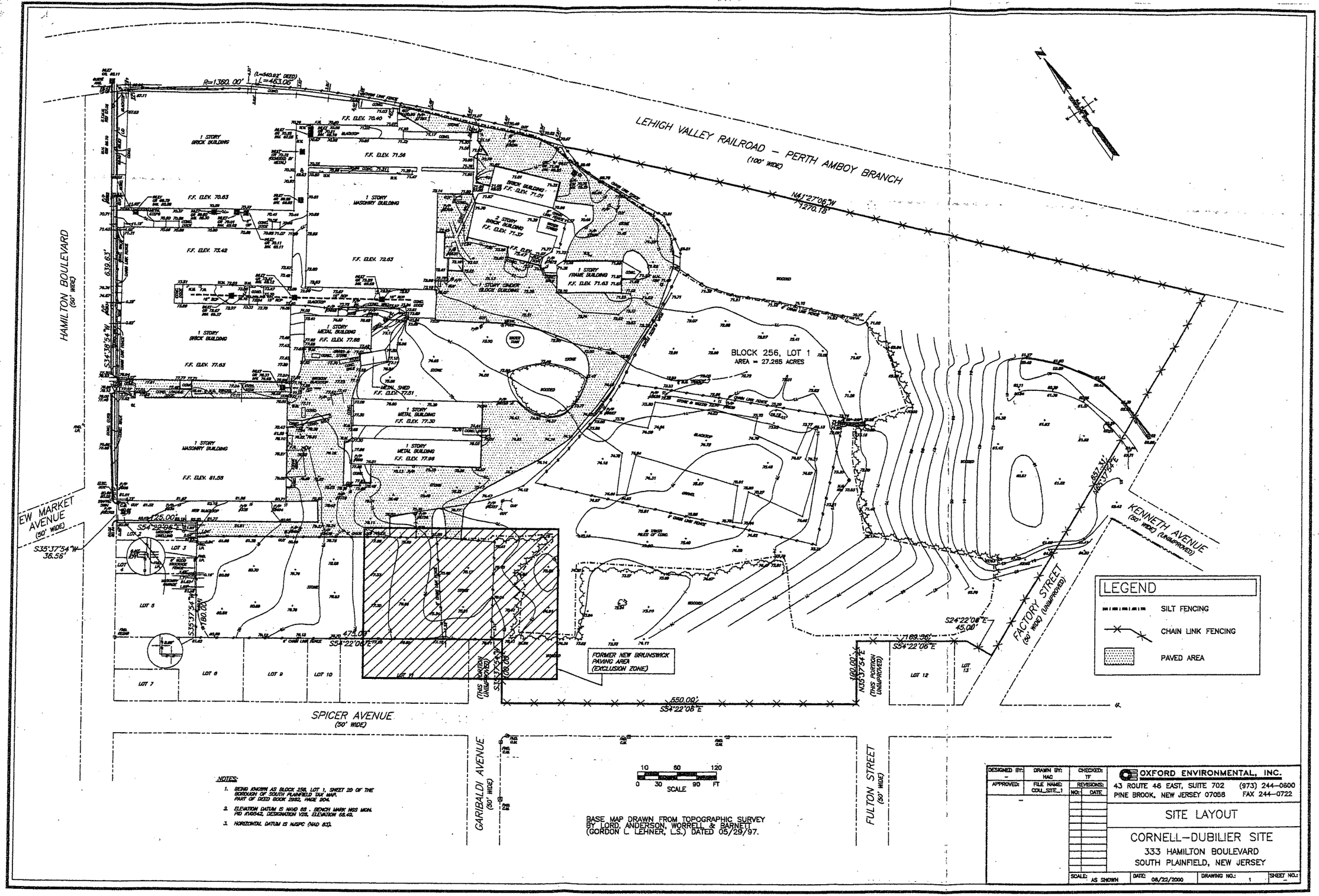
4) Check-in on entering Exclusion zone.

5) Checkout on exiting Exclusion zone.

6) Implement the buddy and communications system.

7) Line of sight must be in position.

8) Wear appropriate level of protection as defined in this HASP.



NOTES:

1. BEING KNOWN AS BLOCK 256, LOT 1, SHEET 20 OF THE BOROUGH OF SOUTH PLAINFIELD TAX MAP, PART OF DEED BOOK 2982, PAGE 304.
2. ELEVATION DATUM IS NAVD 88 . BENCH MARK WAS MON. PID #V0542, DESIGNATION V26, ELEVATION 68.40.
3. HORIZONTAL DATUM IS NJSPC (NAD 83).

BASE MAP DRAWN FROM TOPOGRAPHIC SURVEY BY LORD, ANDERSON, WORRELL & BARNETT (GORDON L. LEHNER, L.S.) DATED 05/29/97.

DESIGNED BY: –	DRAWN BY: HAG	CHECKED: TF
APPROVED: –	FILE NAME: CDUL_SITE_1	REVISIONS: NO: DATE:

OXFORD ENVIRONMENTAL, INC.
43 ROUTE 46 EAST, SUITE 702 (973) 244–0600
PINE BROOK, NEW JERSEY 07058 FAX 244–0722

SITE LAYOUT

CORNELL–DUBILIER SITE

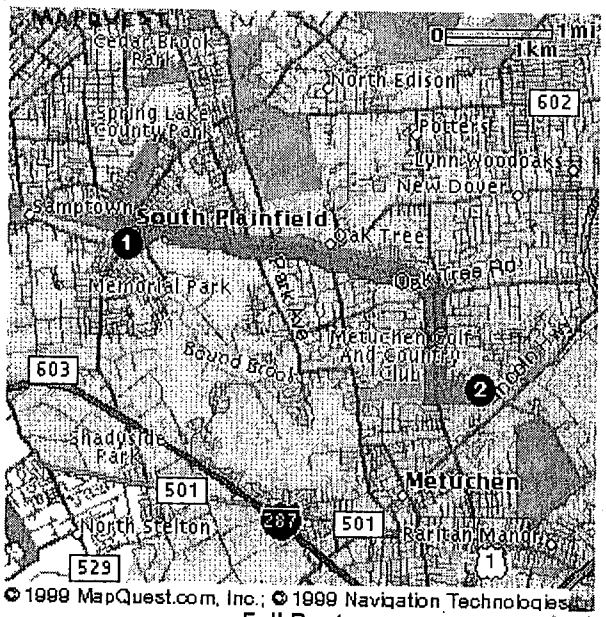
333 HAMILTON BOULEVARD
SOUTH PLAINFIELD, NEW JERSEY

SCALE: AS SHOWN	DATE: 08/22/2000	DRAWING NO.: 1	SHEET NO.:

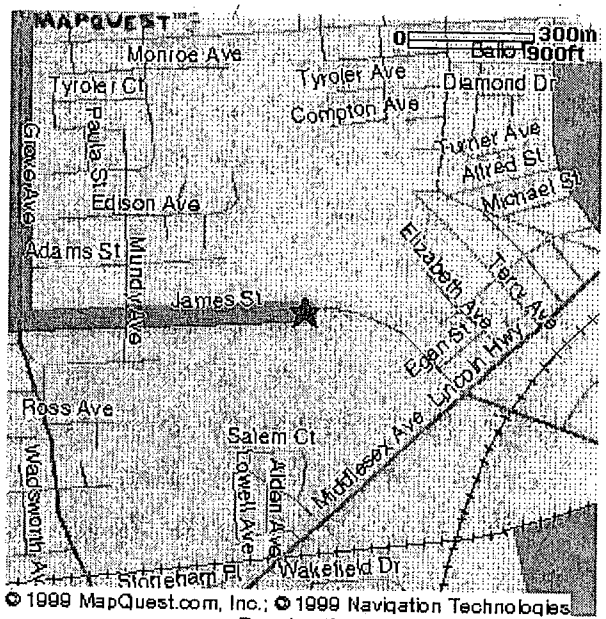
1 in.

Starting From:	Arriving At:	Distance:	Approximate Travel Time:	
333 Hamilton Boulevard South Plainfield, NJ 07080-3339	65 James Street Edison, NJ 08820-3947	4.8 miles	12 mins	Reverse Driving Directions

	Directions	Miles
1.	Start out going Southwest on HAMILTON BLVD towards CR-603 by turning left.	0.0
2.	Turn SHARP RIGHT onto LAKEVIEW AVE/CR-603.	0.2
3.	Turn RIGHT onto CHURCH ST.	0.1
4.	Turn RIGHT onto HAMILTON BLVD.	0.1
5.	Turn LEFT onto S PLAINFIELD AVE.	0.0
6.	Turn RIGHT onto FRONT ST.	0.1
7.	Turn LEFT onto OAK TREE AVE.	1.1
8.	OAK TREE AVE becomes OAK TREE AVE/CR-604.	0.2
9.	OAK TREE AVE/CR-604 becomes OAK TREE RD/CR-604.	1.6
10.	Turn RIGHT onto GROVE AVE.	1.0
11.	Turn LEFT onto JAMES ST.	0.4



Full Route



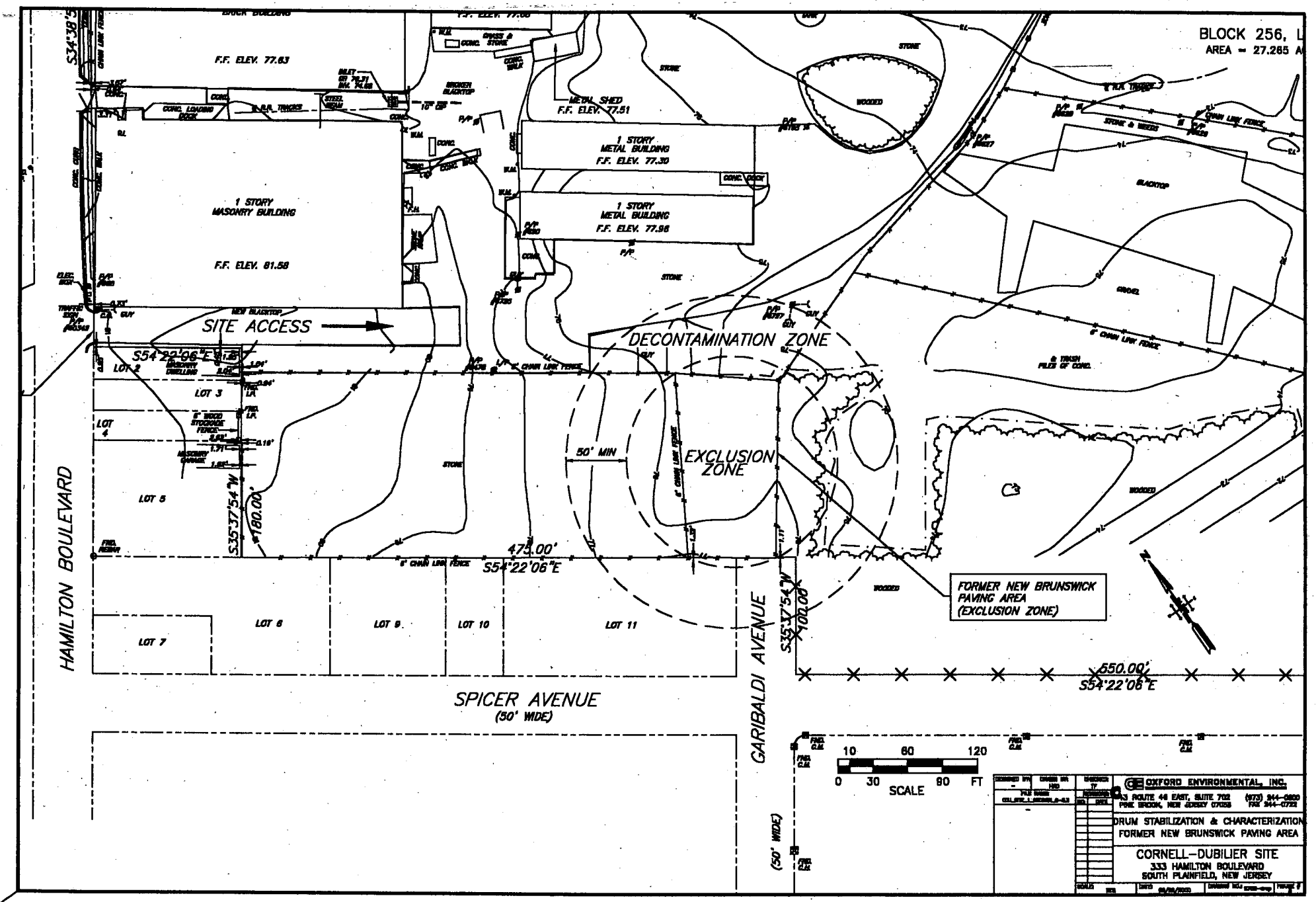
Destination

OXFORD ENVIRONMENTAL, INC.
43 Route 46 East, Suite 702
Pine Brook, New Jersey 07058

MAP TO NEAREST HOSPITAL
CORNELL-SUBILIER ELECTRONICS SITE
SOUTH PLAINFIELD, NEW JERSEY

Drawn By: TMF

Date: 05/30/00 | Scale: NTS | Figure: 2


BLOCK 256, L
AREA = 27.265 A
1 STORY MASONRY BUILDING
F.F. ELEV. 77.63
F.F. ELEV. 81.58
1 STORY METAL BUILDING
F.F. ELEV. 77.30
1 STORY METAL BUILDING
F.F. ELEV. 77.96
METAL SHED
F.F. ELEV. 77.51
SITE ACCESS
DECONTAMINATION ZONE
EXCLUSION ZONE
50' MIN
FORMER NEW BRUNSWICK PAVING AREA (EXCLUSION ZONE)
HAMILTON BOULEVARD
GARIBALDI AVENUE
SPICER AVENUE
(50' WIDE)
(50' WIDE)
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
S34°38'5
S54°22'06"E 31.25'
S35°37'54"W 180.00'
473.00'
S54°22'06"E
S35°37'54"W 100.00'
550.00'
S54°22'06"E
0 10 30 60 90 120 FT
SCALE
OXFORD ENVIRONMENTAL, INC.
DRUM STABILIZATION & CHARACTERIZATION
FORMER NEW BRUNSWICK PAVING AREA
CORNELL-DUBILIER SITE
333 HAMILTON BOULEVARD
SOUTH PLAINFIELD, NEW JERSEY

OE # 9703-003

HEALTH & SAFETY PLAN:

Drum Stabilization and Characterization at the Former New Brunswick Paving Area

Cornell-Dubilier Electronics Site
333 Hamilton Boulevard
South Plainfield, New Jersey

Submitted to

U.S. Environmental Protection Agency, Region II
Removal Action Branch
2890 Woodbridge Avenue
Edison, New Jersey 08837

Prepared for

DSC of Newark Enterprises, Inc.
70 Blanchard Street
Newark, New Jersey 07105

Prepared by

OXFORD ENVIRONMENTAL, INC.
43 Route 46 East, Suite 702,
Pine Brook, NJ 07058
973-244-0600 • fax 973-244-0722

TABLE OF CONTENTS

TABLES

FIGURES

1.0 SCOPE AND APPLICABILITY

The following Health and Safety Plan (HASP) is intended to serve as the minimum requirements for implementation of site activities. The information contained herein presents the health and safety procedures to be employed during the course of work activities at a regulated hazardous waste site, or where environmental contaminants may be encountered during the course of field operations. This HASP has been prepared to address health and safety issues specific to the Cornell-Dubilier Electronics site, as well as satisfy the requirements of OSHA's Standards for Hazardous Waste Operations and Emergency Response (29 CFR 1910.120) and EPA's Standard Operating Safety Guide, (OSWER Directive 9285.103, June 1992).

2.0 LIMITATIONS

This HASP provides the minimum health and safety requirements to be employed while performing site activities at the Cornell-Dubilier Electronic Site, hereinafter referred to as the "Site." This plan is not intended to be a comprehensive training manual nor does it detail all procedures that may be utilized on site, however, it is intended to be a guidance manual for specific site operations deemed appropriate. Detailed information and guidance on materials covered in this plan were adopted from general accepted industry standards and professional practices. All regulations of the Occupational Safety and Health Act (OSHA) are to be adhered to by Oxford Environmental, Inc., its employees, representatives and subcontractors, and shall be responsible for initiating, maintaining, and supervising all safety protocols and programs in connection with the work.

This HASP has been prepared based on information reviewed from previous studies prepared by third parties, consultants, and regulatory agencies, including but not limited to the U.S. Environmental Protection Agency, its subcontractors and other third parties. Oxford Environmental, Inc. makes no warranties, either expressed or implied, as to the accuracy or completeness of information contained in the documents reviewed to aid Oxford in the preparation of this HASP. As such, the procedures and requirements set forth herein are intended as minimum guidelines for the implementation of the site activities.

This HASP is a living document that will be subject to review and/or revision by the designated Site Health and Safety Officer (HSO) and Health and Safety Manager (HSM), as often as necessary to adapt to changing site conditions, or as site specific health and safety issues arise. The implementation of this HASP shall not relieve other parties from compliance with applicable federal, state, or local regulations or statutes.

3.0 STATEMENT OF WORK

The work to be performed for the implementation of this HASP consists of site stabilization measures to eliminate existing potentially *imminently dangerous* conditions at the Site. The potential conditions are a result of the identification of site materials at the site from site investigation activities conducted by the EPA and its contractors. Typical contaminants of

concern found in subsurface soils consist primarily of polychlorinated biphenyls (PCBs), heavy metals (lead, cadmium, chromium), and some polynuclear aromatic hydrocarbons (PAHs).

In accordance with correspondence letter dated April 25, 2000, the EPA discovered twelve empty drums and several empty containers in the area formerly occupied by New Brunswick Paving during site preparation activities. Accordingly, EPA notified the DSC of Newark Enterprisies (the current owner) and Oxford Environmental, Inc. (facility coordinator) of the discovery, to conduct drum stabilization and characterization to determine the contents of the drums. This HASP addresses the requirements for conducting site activities in response to EPA's request.

4.0 SITE DESCRIPTION

Site Name:	Cornell-Dubilier Electronics Site
Location:	Hamilton Industrial Park 333 Hamilton Boulevard South Plainfield, New Jersey
Site Occupants:	Approximately fifteen business occupying on-site structures
Site Access:	Paved driveways from Hamilton Boulevard.
Known Hazards:	PCBs (specifically Aroclor-1254), lead, arsenic, cadmium, chromium, copper, mercury, silver and zinc in surface and subsurface soils throughout the site.
Areas of Concern:	Surface soil, subsurface soil throughout site, especially around fenced-in area and foot/bike path at the rear of site; stream sediment in the unnamed tributary of Bound Brook; impact to groundwater has not been determined.
Surrounding Population:	Approximately 540 persons reside within 0.5 miles of the Site, with the nearest residential homes being located on Spicer Avenue and on the opposite side of Hamilton Boulevard.

5.0 AREA OF CONCERN

According to the site investigation reports reviewed, the entire site is to be considered an area of concern. The primary area of concern is located towards the rear of the site where electrical components were identified in the surface and subsurface soils.

Analytical results for samples collected by the U.S. EPA indicate that PCBs, lead, and various heavy metals were found to exceed the acceptable federal and state standards. No determination or effort has been made to determine impact to groundwater. The table below presents the contaminants and their concentrations found at on site:

Area of Concern	*Contaminant Concentration*
Unpaved stone and gravel driveways, parking areas, and walkways	PCBs (340 mg/kg, roadway) Lead (340 mg/kg, roadway) Arsenic (09 mg/kg, roadway surface) Cadmium (373 mg/kg, beneath unpaved roadway)
Surface soil, various locations	PCBs (1,100 mg/kg to 51,000 mg/kg, fenced area) Lead (2,200 mg/kg, soil) Arsenic (25.7 mg/kg, soil) Cadmium (36.1 mg/kg, soil) Chromium (78.6 mg/kg, soil) Copper (3,020 mg/kg, soil) Mercury (2.9 mg/kg, soil) Silver (26.7 mg/kg, soil) Zinc (1,380 mg/kg, soil)
Subsurface soil, various locations	PCBs (22,000 mg/kg, subsurface soil) Lead (7,460 mg/kg)
Stream	Trichloroethene (120 ug/kg, sediment; 2 ug/l, surface water)
Foot/bike path	PCBs (3,000 mg/kg, soil) Lead (66,000 mg/kg, soil) Cadmium (271 mg/kg, soil)

According to the Work Plan, contaminated soil has been identified at unpaved, gravel driveways, parking areas and walkways. These areas will be paved over to eliminate potential imminent danger to the site occupants, the surrounding population, and the general public. The area for paving has been estimated based on site plans, environmental reports, observation of existing conditions. Actual area shall be based on land survey and engineering design activities.

6.0 EXCLUSION ZONE

For the purpose of this Site Operations Plan, the Exclusion Zone is defined as the area where contaminated media may be encountered during the course of implementing the work plan. In addition to areas of known PCB contamination, areas where drainage controls will be installed shall be incorporated as part of the exclusion zone, including but not limited to detention ponds, stormwater retention basins, trenches and delay structures.

7.0 PROJECT ORGANIZATION

The following and organizations key personnel are critical to the planned activities at the Site. The organization structure will be reviewed and updated periodically by the facility coordinator.

- Lead Agency:
  U.S. Environmental Protection Agency, Region II
  Removal Action Branch
  2890 Woodbridge Avenue
  Edison, NJ 08837

- Owner/Respondent:
  DSC of Newark Enterprises, Inc.
  70 Blanchard Street
  Newark, NJ 07105

- Owner's Consultant:
  Oxford Environmental, Inc.
  43 Route 46 East
  Pine Brook, NJ 07058

- Subcontractor(s):
  AWT Environmental Services, Inc. (HAZMAT Contractor)
  Accredited Laboratories, Inc. (Environmental Laboratory)

8.0 KEY PROJECT PERSONNEL

The following organizational chart identifies key project personnel responsible for the oversight and implementation of the Site Operations Plan.

- On-Scene Coordinator (OSC):
  Eric Wilson, USEPA Region II
  Phone: (732) 906-6991 Fax: (732) 906-6182

  The OSC shall be the designated authority having jurisdiction over the performance of work on the site and shall ensure compliance with the Order.

- Facility Coordinator:
  Timothy Francisco, Oxford Environmental, Inc.
  Phone: (973) 244-0600 Fax: (973) 244-0722

  The facility coordinator, on behalf of the Respondent (DSC of Newark Enterprises, Inc.), is responsible for the overall management, coordination and implementation of the Site Operations Plan. All references to Site Manager in the HASP shall be understood to mean the Facility Coordinator or his designee. All references to Project Leader within the HASP shall be understood to mean the contractor's supervisor.

9.0 SITE HEALTH & SAFETY PERSONNEL

Oxford Environmental, Inc. will be responsible for overall site health and safety monitoring and oversight during the installation of the soil cap, paving activities and associated subsurface construction activities (e.g. soil erosion and drainage control).

The following Oxford personnel are assigned to implement and enforce this HASP:

- Site Health & Safety Officer (HSO): William H. Bilgeshouse
  The Site Health and Safety Officer (HSO) has total responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. The Site HSO will be responsible for ensuring compliance with the provisions of the HASP, including, but not limited to site control and security, air monitoring, evaluation of personal protective equipment, appropriateness of respiratory protection, assessment of hazards, emergency notification, and decontamination. It is also the responsibility of the HSO to conduct site inspections on a regular basis in order to ensure the effectiveness of this plan. Changing field conditions may require decisions to be made concerning adequate protection programs.

- Health & Safety Manager (HSM): Scott M. Donnenberg, CSP
  The HSM will be responsible for conducting health and safety audits and provide technical consultation on health and safety issues and concerns that arise during the course of the project.

10.0 SITE CONTROL

An on-site command post shall be established on-site. The HSO shall coordinate site access and security on site. A safe perimeter will be established in all directions of the area of concern. No unauthorized persons shall be allowed within this area. The buddy system shall be employed during all field operations.

The prevailing wind conditions are variable and shall be assessed by the HSO on a daily basis prior to the performance of work activities. The Support Zone (clean area) and Contamination Reduction Zone (decontamination area) shall be located upwind from the Exclusion Zone (the contaminated area or Hot Zone.

Control boundaries shall be established and designated as follows:

Control Zone	***Control Boundary***	***Wind Direction***
Exclusion (Hot) Zone	Safety fencing / barricade (orange)	⇧
Contamination Reduction (Decontamination) Zone	Caution tape (yellow)	⇧
Support Zone (Field Office)	Traffic cones (safety orange)	⇧

All personnel arriving or departing the site shall log in and out with the record-keeper or HSO. All activities on site must be cleared through the Site Manager or EPA's OSC. All other visitors site shall check in with the Health and Safety Officer or Project Leader. Upon satisfactory presentation of credentials and training certifications, he/she shall log in and out with the record-keeper.

All activities of the visitor on site must be cleared through the Project Leader prior to commencing them. Any person found to be in violation of the HASP, poses a potential liability to the safety and welfare of personnel, the general public or the environmental, or as determined by the HSO/Site Manager shall be escorted off-site and shall not be allowed back on site under any circumstances.

11.0 WARNING SIGNS

The following warning sign shall be posted at all entrances to the site and at intervals along the proposed property boundary fence line.

DANGER
HAZARDOUS MATERIAL PRESENT
DO NOT ENTER
AUTHORIZED PERSONNEL ONLY

12.0 HAZARD ASSESSMENT

The following substance(s) are known or suspected to be present on site. The estimated concentration of contaminants to be encountered, the media in which those hazards exist, and the potential routes for exposure are also provided below:

Known or Suspected Contaminants Present On Site	*Route of Exposure, Health Hazard, Symptoms, and Exposure Limits*
Polychlorinated Biphenyls (PCBs, Chrolodiphenyl, Aroclor® 1254, Aroclor® 1248) CAS No. 11097-69-1	Hazard: Inhalation, Absorption (Skin), Ingestion, Contact (Skin and/or eye contact) Symptoms: Eye irritation, chloracne; liver damage; carcinogen NIOSH: 0.001 mg/m3 OSHA: 0.5 mg/m3

Lead (as Pb)	Hazard: Inhalation, Ingestion, Contact (Skin and/or eye contact) Symptoms: Weakness, fatigue insomnia, facial pallor, anorexia, malnutrition, constipation, abdominal pain, colic, anemia, gingival lead line, tremor, paralysis wrist/ankles, encelopathy, neoropathy, eye irritation, hypotension NIOSH: 0.100 mg/m3 OSHA: 0.05 mg/m3 IDLH: 1700 mg/m3
Arsenic (inorganic as As) CAS No. 7440-38-2	Hazard: Inhalation, Ingestion, Absorption (Skin), Contact (Skin and/or eye contact), carcinogen Symptoms: ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyper-pigmentation of skin NIOSH: 0.002 mg/m3 (15-min) OSHA: 0.010 mg/m3 IDLH: 100 mg/m3
Cadmium (dust) CAS No. 7440-43-9	Hazard: Inhalation, Ingestion, carcinogen Symptoms: pulmonary edema, dyspnea, cough, chest tightness, substernal pain, headaches, chills, muscle aches, nausea, vomiting, diarrhea, insomnia, emphysema, proteinuria, mild anemia NIOSH: lowest feasible conc. OSHA: 0.2 mg/m3, C 0.6 mg/m3 IDLH: 50 mg/m3
Chromium CAS No. 7440-47-3	Hazard: Inhalation, Ingestion Symptoms: histolilogic fibrosis of lungs NIOSH: 0.5 mg/m3 OSHA: 1.0 mg/m3 IDLH: not established

Copper CAS No. 7440-50-8	Hazard: Inhalation, Ingestion, Contact (Skin and/or eyes) Symptoms: irritation of nasal mucus membranes/pharynx, nasal perforation, eye irritation, metallic taste, dermatitis NIOSH/OSHA: 1.0 mg/m3 IDLH: not established
Mercury (metallic) CAS No. 7439-97-6	Hazard: Inhalation, Absorption (skin), Contact (Skin and/or eyes) Symptoms: cough, chest pain, dyspnea, bronchial pneuitis, tremor, insomnia, irritability, indecision, headaches, fatigue, weakness, stomatitis, salivation, gastrointestinal disturbance, anorexia; low weight, proteinuria, eye and skin irritation NIOSH/OSHA: 0.05 mg/m3 (skin) IDLH: 28 mg/m3
Silver (metal dust) CAS No. 7440-22-4	Hazard: Inhalation, Ingestion, Contact (Skin and/or eyes) Symptoms: blue-gray eyes, nasal septum, throat, skin; skin irritation, ulceration; gastrointestinal disturbance NIOSH/OSHA: 0.01 mg/m3 IDLH: not established
Zinc CAS No. 7440-66-6	Hazard: Inhalation Symptoms: sweet, metallic taste; dry throat, cough, chills, fever; tight chest, dyspnea, rales, reduced pulmonary function; headaches; blurred vision; muscle camps, low back pain; nausea,; vomiting; fatigue, malaise NIOSH/OSHA: 5 mg/m3; STEL 10 mg/m3 IDLH: not established

1,2-Dichloroethene CAS No. 156-60-5	Hazard: Inhalation, Ingestion, Contact (skin) Symptoms: irritation of eye, respiratory system; CNS depression NIOSH/OSHA: 200 ppm (790 mg/m3) IDLH: 4000 ppm
Trichloroethene CAS No. 79-01-6	Hazard: Inhalation, Ingestion, Contact (skin), carcinogen Symptoms: headaches, vertigo; visual disturbance, tremors, somnia, nausea, vomiting,; eye irritation; dermatitis; cardiac arryhthmias, paresthesia NIOSH: 25 ppm OSHA: 50 ppm (270 mg/m3), STEL 200 ppm (1080 mg/m3) IDLH: 1000 ppm

Source: NIOSH Pocket Guide to Chemical Hazards, 1990.

Additional hazards may be encountered on site, but have not been identified. When they are identified, a hazard assessment shall be performed for each substance. Hazardous substance information form(s) for the identified substance(s) are attached.

13.0 EMPLOYEE TRAINING

All personnel involved with on-site operations shall meet the following minimum requirements for training: initial OSHA 40-hour and annual 8-hour refresher Hazardous Waste Operations and Emergency Response training in accordance with 29 CFR 1910.120(e).

13.1 Project Personnel

The following table summarizes the training of project personnel.

Name	*Title/Function*	*Training*
Timothy Francisco	Facility Coordinator Project Manager	40-hour HAZWOPER 8-hour Site Supervisor
Gary Boyer	Project Engineer	40-hour HAZWOPER 8-hour Site Supervisor
Scott M. Donnenberg, CSP	Health & Safety Manager	40-hour HAZWOPER Worker 8-hour Site Supervisor Emergency Medical Technician

William H. Bilgeshouse	Project Superintendent/ Health & Safety Officer	40-hour HAZWOPER Worker HAZMAT First Responder

13.2 Other Personnel

1. General site workers (such as equipment operators, general laborers and supervisory personnel) engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards shall receive a minimum of 40 hours of instruction off the site, and a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor.

2. Workers on site only occasionally for a specific limited task (such as, but not limited to, ground water monitoring, land surveying, or geo-physical surveying) and who are unlikely to be exposed over permissible exposure limits and published exposure limits shall receive a minimum of 24 hours of instruction off the site, and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

3. Workers regularly on site who work in areas which have been monitored and fully characterized indicating that exposures are under permissible exposure limits and published exposure limits where respirators are not necessary, and the characterization indicates that there are no health hazards or the possibility of an emergency developing, shall receive a minimum of 24 hours of instruction off the site and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

4. Workers with 24 hours of training, and who become general site workers or who are required to wear respirators, shall have the additional 16 hours and two days of training necessary to total the training.

5. Management and supervisor training. On-site management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations shall receive 40 hours initial training, and three days of supervised field experience and at least eight additional hours of specialized training at the time of job assignment on such topics as, but not limited to, the employer's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques.

6. Qualifications for trainers. Trainers shall be qualified to instruct employees about the subject matter that is being presented in training. Such trainers shall have satisfactorily completed a training program for teaching the subjects they are expected to teach, or they shall have the academic credentials and instructional experience necessary for teaching the subjects. Instructors shall demonstrate competent instructional skills and knowledge of the applicable subject matter.

7. Training certification. Employees and supervisors that have received and successfully completed the training and field experience shall be certified by their instructor or the head instructor and trained supervisor as having successfully completed the necessary training. A written certificate shall be given to each person so certified. Any person who has not been

so certified or who does not meet the requirements shall be prohibited from engaging in hazardous waste operations.

8. Emergency response. Employees who are engaged in responding to hazardous emergency situations at hazardous waste clean-up sites that may expose them to hazardous substances shall be trained in how to respond to such expected emergencies.

9. Refresher training. Employees, managers and supervisors shall receive eight hours of refresher training annually, any critique of incidents that have occurred in the past year that can serve as training examples of related work, and other relevant topics.

10. Equivalent training. Employers who can show by documentation or certification that an employee's work experience and/or training has resulted in training equivalent to that training shall not be required to provide the initial training requirements of those paragraphs to such employees and shall provide a copy of the certification or documentation to the employee upon request. However, certified employees or employees with equivalent training new to a site shall receive appropriate, site specific training before site entry and have appropriate supervised field experience at the new site. Equivalent training includes any academic training or the training that existing employees might have already received from actual hazardous waste site work experience.

13.3 Subcontractors & Visitors

All subcontractors and their employees shall meet the minimum training requirements as set forth in 29 CFR 1010.120 (e), OSHA 40-hour Hazardous Waste Operations and Emergency Response. Authorized visitors shall also meet these training requirements. Evidence of training shall be submitted prior to commencement of site activities.

14.0 MEDICAL SURVEILLANCE

14.1 Applicability

Oxford Environmental, Inc. maintains a medical surveillance program in accordance with 29 CFR 1910.120 (f). The medical surveillance program has been instituted for:

1. All employees who are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or, if there is no permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;

2. All employees who wear a respirator for 30 days or more a year or as required by 29 CFR 1910.134;

3. All employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation; and

4. Members of HAZMAT teams.

Note: Organizations and entities involved in the project shall be responsible for maintaining medical surveillance program for their employees.

14.2 Frequency Of Medical Examinations

Medical examinations and consultations shall be made available to each employee covered under the medical surveillance program on the following schedules:

1. Prior to assignment;

2. At least once every twelve months for each employee covered unless the attending physician believes a longer interval (not greater than biennially) is appropriate;

3. At termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months;

4. As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation;

5. At more frequent times, if the examining physician determines that an increased frequency of examination is medically necessary.

14.3 Examinations For Injury Or Exposure

For employees who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used:

1. As soon as possible following the emergency incident or development of signs or symptoms;

2. At additional times, if the examining physician determines that follow-up examinations or consultations are medically necessary.

14.4 Content Of Medical Examinations And Consultations.

1. Medical examinations include a medical and work history (or updated history if one is in the employee's file) with special emphasis on symptoms related to the handling of hazardous substances and health hazards, and to fitness for duty including the ability to wear any required PPE under conditions (i.e., temperature extremes) that may be expected at the work site.

2. The content of medical examinations or consultations made available to employees shall be determined by the attending physician. The guidelines in the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities shall be consulted.

3. All medical examinations and procedures shall be performed by or under the supervision of a licensed physician, preferably one knowledgeable in occupational medicine, and shall be provided without cost the employee, without loss of pay, and at a reasonable time and place.

4. Information provided to the physician. The employer shall provide one copy of the standard and its appendices to the attending physician, and in addition the following for each employee:

   (i) A description of the employee's duties as they relate to the employee's exposures.
   (ii) The employee's exposure levels or anticipated exposure levels.
   (iii) A description of any personal protective equipment used or to be used.
   (iv) Information from previous medical examinations of the employee which is not readily available to the examining physician.
   (v) Information required by 29 CFR 1910.134.

14.5 Physician's Written Opinion

Oxford shall obtain and furnish the employee with a copy of a written opinion from the attending physician containing the following:

1. The physician's opinion as to whether the employee has any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health from work in hazardous waste operations or emergency response, or from respirator use.

2. The physician's recommended limitations upon the employee's assigned work.

3. The results of the medical examination and tests if requested by the employee.

4. A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions which require further examination or treatment.

The written opinion shall not reveal specific findings or diagnoses unrelated to occupational exposures.

14.6 Recordkeeping

An accurate record of the medical surveillance shall be retained. This record shall be retained for the period specified and meet the criteria of 29 CFR 1910.20. The records shall include at least the following information:

1. The name and social security number of the employee;

2. Physician's written opinions, recommended limitations, and results of examinations and tests;

3. Any employee medical complaints related to exposure to hazardous substances;

4. A copy of the information provided to the examining physician by the employer, with the exception of the standard and its appendices.

The records shall be retained for a period of employment and as specified in 29 CFR 1910.20.

15.0 PERSONAL PROTECTIVE EQUIPMENT

The type of protective equipment recommended for this project has been based on the preliminary evaluation of environmental studies and prior experience with projects of the same type. Any changes or revisions of the recommended personal protective measures shall be by Oxford's Certified Safety Professional (CSP), his designated representative or the Health & Safety Officer.

The following prescribes a personal protection plan when possible exposure to hazardous materials exists. Workers involved with hazardous materials shall be assigned personal protective equipment and proper instruction on its proper use and maintenance.

Personnel who handle material known to be hazardous, or of unknown toxicity are required to take sufficient precautions. It is the responsibility of the designated Health and Safety Officer (HSO) to specify the correct level of protective equipment to be used on the job. All field personnel shall receive training in the proper use and methods of wearing protective equipment. The level of protective equipment is determined by the types and levels of material present at the site. These levels are determined through specific knowledge of the hazardous materials and air monitoring as described in this Plan.

16.0 SITE SPECIFIC LEVEL OF PROTECTION

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Location	*Job Functions*	*Recommended Level of Protection*
Exclusion Zone	Drum Stabilization, Sampling, and Characterization.	Level A☐ Level B☒ Level C☐ Modified Level D☐ • For each specific task, conduct continuous monitoring and utilize recommended level of protection. • Once it is established that airborne concentrations of contaminants are undetectable or below the action level, downgrade PPE to Level C. • If real time air monitoring indicates any detectable airborne organic vapors, dust levels above the action level or IDLH conditions, upgrade PPE as directed by HSO.
Contamination Reduction Zone	Decontamination (Personnel and Equipment) Sample Management	Level A☐ Level B☐ Level C☒ Modified Level D☐ • Conduct real time monitoring as indicated in the monitoring schedule. • If airborne contaminant concentrations exceed the Action Levels, evaluate the scope of work, work procedures, and/or engineering controls to minimize airborne concentrations. • If airborne contaminant concentrations exceed the OSHA Permissible Exposure Limits (PELs), upgrade PPE as directed by HSO, in consultation with the HSM.

Support Zone	Mobilization Demobilization Deliveries Office Trailer Break Areas	Level A ☐ Level B☐ Level C☐ Modified Level D☒ • Conduct real-time monitoring as indicated in the monitoring schedule. • In the event, airborne contaminant concentrations are detectable, the HSO, in consultation with the HSM, take precautionary measures to evacuate the zone, isolate the area, determine the source, and take appropriate measures to eliminate the source. • Under no circumstances shall the Support Zone be occupied until cleared by the HSO.

16.1 Specified Protective Equipment

Based on the information gathered from previous site investigations and analytical data, the following site specific protective equipment is provided as the minimum recommended level of protection to be utilized on site.

Modified Level C	*Level C*
• Hard hat • Safety glasses/goggles • Nitrile gloves (outer) • Latex gloves (inner) • Tyvek or splash apron • Disposable booties (chemical resistant) • Splash aprons is recommended when handling contaminated water or equipment. • Full-face air purifying respirator (on-hand)	• Hard hat • Safety glasses/goggles • Nitrile gloves (outer) • Latex gloves (inner) • Full-face air purifying respirator • Tyvek or splash apron • Disposable booties (chemical resistant) • Splash aprons is recommended when handling contaminated water or equipment.

Important: Changes to the above levels of protection shall be made by the HSO and Project Leader.

16.2 Changing Field Conditions

In the event of changing field conditions, including, but not limited to new work tasks, uncharacterized work areas, adverse weather conditions, or elevated airborne concentrations of

contaminants from air monitoring data, continuous monitoring shall be implemented. If the action levels are reached or exceeded, Level B personal protective equipment shall be instituted. If the permissible exposure limits are reached or exceeded, reevaluate the situation and take appropriate measures to minimize airborne concentrations.

17.0 SITE MONITORING

17.1 Monitoring Objectives

Health and safety (H&S) monitoring will be conducted on the site during all field activities to accomplish the following objectives:

1. To ensure proper selection of personal protective equipment;

2. To delineate areas where personal protection is needed;

3. To evaluate the potential health effects of exposure to contaminants; and

4. To protect and safeguard the health and safety of the workers, the general public and the environment.

17.2 Exposure Monitoring

1. Monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

2. Air monitoring shall be used to identify and quantify airborne levels of hazardous substances and safety and health hazards in order to determine the appropriate level of employee protection needed on site.

17.3 Initial Entry

Upon initial entry, representative air monitoring shall be conducted to identify and IDLH condition, exposure over permissible exposure limits or published exposure levels, exposure over a radioactive material's dose limits or other dangerous condition such as the presence of flammable atmospheres or oxygen-deficient environments.

17.4 Periodic Monitoring

Periodic monitoring shall be conducted when the possibility of an IDLH condition or flammable atmosphere has developed or when there is indication that exposures may have risen over permissible exposure limits or published exposure levels since prior monitoring. Situations where it shall be considered whether the possibility that exposures have risen are as follows:

(i) When work begins on a different portion of the site.

(ii) When contaminants other than those previously identified are being handled.
(iii) When a different type of operation is initiated (e.g., drum opening as opposed to exploratory well drilling).
(iv) When employees are handling leaking drums or containers or working in areas with obvious liquid contamination (e.g., a spill or lagoon).

17.5 Monitoring of High-Risk Employees

After the actual clean-up phase of any hazardous waste operation commences (for example, when soil, surface water or containers are moved or disturbed), Oxford will monitor those employees likely to have the highest exposures to hazardous substances and health hazards likely to be present above permissible exposure limits or published exposure levels by using personal sampling frequently enough to characterize employee exposures.

If the employees likely to have the highest exposure are over permissible exposure limits or published exposure limits, then monitoring shall continue to determine all employees likely to be above those limits.

Oxford may utilize a representative sampling approach by documenting that the employees and target chemicals chosen for monitoring are based on the criteria stated above.

18.0 MONITORING INSTRUMENTATION

Direct reading instruments will be used to give instantaneous information concerning levels of contaminants. These shall include but are not limited to:

1. Combustible gas/oxygen detector for detection of flammable or explosive atmospheres and oxygen deficiency;

2. Organic vapor meter (OVM) or photoionization detector (PID) for organic vapors, specifically *1,2-Dichloethene and Trichloroethene.*

3. Detector tubes for monitoring specific air contaminants; and

4. Respirable dust monitor for total nuisance and toxic dusts.

All field screening and monitoring devices shall be operated by a qualified individual knowledgeable about the instrument's operating principles and limitations.

19.0 MONITORING SCHEDULE

The above monitoring instruments shall be used on site at the specified intervals and locations:

Monitoring Instrument	*Exclusion Zone*	*Contamination Reduction Zone*	*Support Zone*
Combustible Gas Indicator/ Oxygen Monitor	Continuous	Continuous	Continuous
Detector Tubes	Daily	Daily	Daily
OVM/PID	Continuous	Continuous	Hourly
Respirable Dust Monitor	Continuous	Continuous	Hourly
Personal Air Sampling	Hourly	Hourly	Hourly

19.1 Action Levels

Exceeding the following Action Levels (AL) will require the re-evaluation of potential hazards, engineering controls, personal protective equipment, or work procedures by the HSO, and the appropriate response to be taken.

Hazard	*Action Level*	*Response*
Flammability Combustibility	10% of LEL	stop work, evacuate work area, determine source if possible; ventilate area, re-occupy as directed by HSO
Oxygen Deficiency	< 19.5%	stop work, evacuate area; wait until oxygen content is greater than 19.5%
Organic Vapors (instrument calibrated to Methane)	0.1 ppm	stop work, determine source if possible; if detectable re-assess personal protective equipment
Total Nuisance Dust (incl. heavy metals)	2.5 mg/m^3	stop work, determine source if possible; if detectable re-assess PPE.

20.0 DUST MONITORING

Dust monitoring shall be performed using direct-reading respirable dust monitor (GCA Miniram) and OSHA/NIOSH approved air sampling methods via air filter for laboratory analysis. Due to the presence of several contaminants, the following table of calculated exposure limits shall be utilized to determine exposure limits:

Site Contaminants	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)	Soil $Conc._{max}$ (ppm)	$Conc._n/El_n$ (ppm)
PCBs	0.5	0.001	22000	44000
Lead	0.05	0.1	340	6800
Cadmium	0.005	0.0025	19	3800
			Total	54600

Calculating the Exposure Limit of Mixture* :

$$EL_{mix} = \frac{(10^6 \text{ mg/kg}) / \text{Safety Factor})}{(conc_1/EL_1 + conc_2 + EL_2 + ... conc_n/El_n)}$$

$$EL_{mix} = \frac{10^6 \text{ mg/kg} / \quad 4}{54600} = 4.58 \text{ mg/m}^3$$

*Therefore the site-specific exposure limit to contaminated soil/dust is **5 mg/m³***

20.1 Action Levels

Due to the proximity of work areas to occupied businesses and residences, dust control measures will be implemented during all construction activities. If dust observed migrating from work areas to neighboring residential or commercial areas or to occupied buildings within the industrial park, work will stop and dust control measures will be implemented. Work will continue upon satisfactory implementation of dust control measures.

To ensure that dust control measures are implemented when required, dust monitoring shall be conducted continuously in the immediate areas of construction and at perimeter locations downwind of the work areas. When dust monitor readings reach or exceed **an action level of 2.5 mg/m³** for total nuisance dust, work shall immediately stop and the above dust control measures implemented. Work shall continue upon satisfactory implementation of dust control measures and dust monitor readings are below the action level.

20.2 Corrective Measures

In the event that the dust monitor indicate readings equal to or greater than the action level, work shall immediately cease and the HSO shall reevaluate the work procedures, engineering

* Establishing Exposure Limits and Selecting Levels of Protection for Hazardous Waste Projects. Marlowe, Christopher S. E., CD Federal Programs Corporation, Fairfax, Virginia.

controls, and implement dust control measures until dust readings are consistently below the action level.

21.0 UNKNOWN HAZARDS

In all situations where the types of potentially hazardous waste material is unknown, maximum protection levels are maintained until the hazards can be adequately assessed. A decision to downgrade or upgrade the level of personnel protection by the HSO will be based on:

1. Readings from real time monitoring instrumentation (i.e. explosimeter, organic vapor analyzer, toxic gas monitor)

2. Visual observations such as stressed vegetation, wind, dust, temperatures, discoloration of soils, evidence of leaking drums, product vessels.

3. Sensory observations such as odors and fumes

4. Specific information of the known chemical contaminants (i.e. low flash point, reactivity)

22.0 COMMUNICATIONS PROCEDURES

22.1 Buddy System

The buddy system shall be utilized when respiratory protection is in use. Line of sight will be established during all other operations.

22.2 Hand Signals

- thumbs up with motion ..... lift up
- thumbs down ..... no good, try again
- point left ..... move this way, follow me
- point right ..... move this way, follow me
- point up with circling motion ..... lift up
- one hand open ..... stop
- ..... both hands open with back up
- point down ..... wait here or pour here
- fore finger and index finger up ..... pause, wait a minute
- thumb and fore finger touching ..... okay

22.3 Radio Communications

Channel (TBD) has been designated as the radio frequency for personnel in the Exclusion Zone. All other on-site communications will use channel (TBD).

Personal in the Exclusion Zone should remain in constant radio communication or within sight of the Project Leader. Any failure of radio communication requires an evaluation of whether personnel should leave the Exclusion Zone.

23.0 DECONTAMINATION

Decontamination procedures ensure that personnel or equipment in the contamination zone do not spread or carry hazardous materials into the decontamination zone. The procedures will be revised whenever the type of personal protective clothing or equipment changes, the site conditions change, or the site hazards are reassessed based on new information.

23.1 Designated Decontamination Area

Decontamination areas shall be established prior to the commencement of any site activities, without exception. All site personnel shall review and be oriented to site-specific safety, work practices, decontamination and emergency procedures prior to entering the Exclusion Zone. A designated area will be established for personnel decontamination and equipment decontamination. Personnel and equipment decontamination should be separated by no less than 25 feet or as designated by the HSO. The equipment decontamination area should be downwind of the personnel decontamination area.

23.2 Personnel Decontamination

All workers entering the exclusion, contamination reduction zones shall employ the correct procedures for decontamination and for changing from contaminated clothing to clean clothing as described below:

Station	*Type*	*Decontamination Procedure*
1	Plastic sheet placed on ground downwind of personnel decontamination stations.	Field Equipment - Drop field equipment (sampling equipment, instruments and samples) on sheet.
2	A wash tub equipped with large brush filled with a decontamination solution (soap and water).	Outer Garments - Use scrub brush to remove gross contamination.
3	A second wash tub filled with rinse solution ("clean" water).	Outer Garments - Rinse off decontamination solution.
4	A third wash tub equipped with large brush filled with decontamination solution (soap and water).	Outer Garments - Use scrub brush to remove gross contamination.

5	A fourth wash tub filled with rinse solution ("clean" water).	Outer Garments - Final rinse decontamination solution from outer garments with clean water.
6	Two buckets filled with decontamination solution (soap and water)	Boots and Gloves - Use scrub brush and decontamination solution to remove all gross contamination.
7	One bucket filled with rinse solution ("clean" water)	Boots and Gloves - Rinse decontamination from boots and gloves with clean water.
8	A trash can with plastic liner	Disposable Items - Remove disposable items such as gloves, boots, Tyvek suits in trash can.
9	Plastic sheet on ground	Respirators - Drop respiratory equipment on plastic sheet for decontamination.
10	Trash can with plastic liner	Clothing - Place any clothing items used under protective clothing in plastic lined trash can and don clean street clothing.

23.3 Equipment Decontamination

All equipment brought into the exclusion and contamination reduction zones shall be decontaminated using the following procedures:

Station	*Type*	*Decontamination Procedure*
1	Plastic sheet placed on ground downwind of personnel decontamination stations.	Field Equipment - Drop field equipment (sampling equipment, instruments and samples) on sheet.
2	A wash tub equipped with large brush filled with a decontamination solution (soap and water).	Soap wash and rinse, solvent rinse, if necessary.
3	Decontamination pad equipped with water hose, brushes and steam cleaning equipment.	Vehicles - Steam clean heavy equipment, if necessary.

23.4 General Procedures

1. Decon wash water for the activities outlined in this plan will be collected for disposal.

2. Disposable clothing or other equipment that is permanently contaminated will be placed in drums for disposal.

3. Decontamination solutions may vary based on the exact constituents of the contaminants. Also, the extent to which the decontamination is carried out may be modified to address particular contaminants or situations.

4. Personnel assisting with decontamination will be in Level C protection unless air monitoring or other information requires a higher level of protection.

5. In extreme situations when there may be a question as to the degree of contamination known or substances of a highly toxic nature are suspected, protective clothing will be discarded after use of tested decontamination.

6. All decontamination methods are assessed by the HSO at the beginning of a program and reviewed periodically throughout the lifetime of the program for its effectiveness.

23.5 Decontamination Waste - Testing and Disposal

1. Wastes consisting of decontamination fluids, sediments and protective clothing shall be placed in approved containers and a representative sample collected for waste characterization (via TCLP).

2. Waste streams found to exceed the acceptable TCLP levels shall be disposed at an approved facility in accordance with EPA and NJDEP regulations.

3. Waste characterization shall include analysis for PCBs by USEPA SW846, Method 8080.

24.0 EMERGENCY RESPONSE PLAN

24.1 Emergency Notification List

In the event of an emergency, the designated HSO shall for direct and coordinate notification of the appropriate emergency entity listed in the table below.

Agency/Facility	Phone
Police	911
Fire / HAZMAT	911
EMS/Ambulance	911
Poison Control Center	800-764-7661
EPA Region II 24-Hour Hotline	908-548-8730
NJ Department of Environmental Protection Hotline	609-292-7172

The HSO will immediately inform the Project Leader of any emergency situations, health & safety recommendations, and any pertinent issues. If the HSO is not on-site, the above list shall be used to notify of the incident. The HSO shall then be notified at (800) 377-8218 after notifying the appropriate emergency entity.

24.2 Emergency Communications

In the event of an emergency and failure of radio communications, the following air horn signals shall be used:

three intermittent short blasts .....leave the exclusion zone
two short blasts ..... emergency, need help
one long blast .....all clear signal

25.0 CONTINGENCY PLAN

Every remedial/removal action project is posed with the threat of a possible spill of hazardous materials. For this reason, the following requirements are requisite during all operations:

1. In an emergency situation, the HSO or supervision personnel shall implement an emergency contingency plan by assessing the nature of the emergency, notifying appropriate emergency response agency above, and if possible, stabilizing the situation until help arrives.

2. The HSO will coordinate/designate an on-site emergency response team composed of qualified on-site personnel created for specific emergency purposes, such as decontamination, rescue, and entry.

3. Off-site rescue teams (i.e. local HAZMAT) shall be used during particularly dangerous emergency operations, and emergencies beyond the capability of the on-site emergency response team.

26.0 SPILL CONTROL PLAN

The best "emergency spill plan" is planning to avoid and prevent spills. All field procedures will be performed with spill prevention as a key factor. In the event of accidental spillage, the following spill response procedures shall be initiated by on-site personnel if is can be performed safely.

1. First Aid will be administered to injured/contaminated persons. Any employee observing a spill will act immediately to remove and/or protect injured/contaminated persons from any life-threatening situation. First Aid and/or decontamination procedures will be implemented as appropriate.

2. Warn unsuspecting persons/ vehicles of the hazard. Personnel will act to prevent any unsuspecting persons from coming in contact with spilled materials by alerting other nearby persons and by obtaining assistance of other personnel who are familiar with spill control and cleanup techniques.

3. Stop the spill at the source, if possible. Without taking unnecessary risks, personnel will attempt to stop the spill at the source. Personnel will not expend more than a brief effort prior to notifying the Engineer.

4. Utilizing available personal radio communications or other rapid communication procedures, the Engineer will be notified of the spill, including information on material spilled, quantity, personnel injuries, and immediate life-threatening hazards.

5. Spill assessment and primary containment. The Project Leader will make a rapid assessment of the spill and direct primary containment measures which may include, but are not limited to: (i) construction of a temporary containment berm utilizing on-site clay absorbent, earth or absorbent pads or booms; and (ii) digging a sump, installing a polyethylene liner and diverting the spilled material to the sump.

6. Spill clean-up. Personnel will cleanup all spills following the spill clean-up plan developed by the Project Leader. The Project Leader will supervise the spill clean-up. Most equipment, materials, and supplies necessary to clean up a spill will already be immediately available on site. Such items may include, but are not limited to: front-end loader, shovels, rakes, clay absorbent, polyethylene, personal safety equipment (respirators, gloves, boots, protective coveralls, hard hats, eye shields), steel drums, pumps, and miscellaneous hand tools.

7. Spill clean-up inspection. The Project Leader will inspect the spill site to determine that the spill has been cleaned up. If necessary, soil water or air samples may be taken and analyzed to demonstrate the effectiveness of the spill clean up effort.

8. Identify the cause of the spill and remedial action to prevent recurrence. The Project Leader will determine the cause of the spill and will determine remedial steps to ensure that recurrence is prevented.

27.0 EMERGENCY MEDICAL CARE

First-aid equipment is available on site at the following locations:

First-aid kit ..... Decontamination Zone
Emergency eye wash ..... Decontamination Zone
Emergency shower ..... Decontamination Zone

28.0 STANDARD EMERGENCY PROCEDURES

The following standard emergency procedures (should be modified as required for incidents) will be used by on site personnel. The Site Safety Officer shall be notified of any on-site emergencies and shall be responsible for ensuring that the appropriate procedures are followed.

28.1 Personnel Injury In The Exclusion Zone

1. Upon notification of an injury in the Exclusion Zone, the designated emergency signal shall be sounded.

2. All site personnel shall assemble at the decontamination line.

3. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline.

4. The Site HSO and Project Team Leader should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone.

5. The on-site First Aider shall initiate the appropriate first-aid; contact should be made for an ambulance and notify the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

28.2 Personnel Injury In The Support/Decontamination Zone

1. Upon notification of an injury in the Support Zone, the Project Team Leader and Site HSO will assess the nature of the injury.

2. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the on-site First Aider initiating the appropriate first-aid and necessary follow-up as stated above.

3. If the injury increases the risk to others, the designated emergency signal shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

28.3 Fire/Explosion

1. Upon notification of a fire or explosion on site, the designated emergency signal shall be sounded and all site personnel shall be assembled at the decontamination line.

2. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

28.4 Equipment Failure

1. If any site worker experiences a failure or alteration of personal protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

2. If any other equipment on site fails to operate properly, the Project Leader and HSO shall be notified and than determine the effect of this failure on continuing operations on site.

3. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

29.0 EMERGENCY EGRESS AND EVACUATION

The following emergency escape routes are designated for use in those situations where egress from the Exclusion Zone cannot occur through the decontamination line:

IMPORTANT: In the event of an emergency, the egress route shall be any area immediately and safely accessible by site personnel. Decontamination procedures may be circumvented in an emergency situation.

In all situations, when an on-site emergency results in evacuation of the Exclusion Zone, personnel shall not reenter until:

1. The conditions resulting in the emergency have been corrected.

2. The hazards have been reassessed.

3. The HASP has been reviewed.

4. Site personnel have been briefed on any changes in the HASP.

30.0 DEFINITIONS

"Buddy system" means a system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

"Clean-up operation" means an operation where hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared-up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment.

"Decontamination" means the removal of hazardous substances from employees and their equipment to the extent necessary to preclude the occurrence of foreseeable adverse health affects.

"Emergency response" or "responding to emergencies" means a response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance. Responses to incidental releases of hazardous substances where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency responses within the scope of this standard. Responses to releases of hazardous substances where there is no potential safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be emergency responses.

"Facility" means (A) any building, structure, installation, equipment ,pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any water-borne vessel.

"Hazardous materials response (HAZMAT) team" means an organized group of employees, designated by the employer, who are expected to perform work to handle and control actual or potential leaks or spills of hazardous substances requiring possible close approach to the substance. The team members perform responses to releases or potential releases of hazardous substances for the purpose of control or stabilization of the incident. A HAZMAT team is not a fire brigade nor is a typical fire brigade a HAZMAT team. A HAZMAT team, however, may be a separate component of a fire brigade or fire department.

"Hazardous substance" means any substance designated or listed under paragraphs (A) through (D) of this definition, exposure to which results or may result in adverse affects on the health or safety of employees;

(A) Any substance defined under section 101(14) of CERCLA;

(B) Any biological agent and other disease-causing agent which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, either directly from the

environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring;

(C) Any substance listed by the U.S. Department of Transportation as hazardous materials under 49 CFR 172.101 and appendices; and

(D) Hazardous waste as herein defined.

"Hazardous waste" means

(A) A waste or combination of wastes as defined in 40 CFR 261.3, or

(B) Those substances defined as hazardous wastes in 49 CFR 171.8.

"Hazardous waste operation" means any operation conducted within the scope of this standard.

"Hazardous waste site" or "Site" means any facility or location within the scope of this standard at which hazardous waste operations take place.

"Health hazard" means a chemical, mixture of chemicals or a pathogen for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, heptatoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. It also includes stress due to temperature extremes. Further definition of the terms used above can be found in Appendix A to 29 CFR 1910.1200.

"IDLH" or "Immediately dangerous to life or health" means an atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.

"Oxygen deficiency" means that concentration of oxygen by volume below which atmosphere supplying respiratory protection must be provided. It exists in atmospheres where the percentage of oxygen by volume is less than 19.5 percent oxygen.

"Permissible exposure limit" means the exposure, inhalation or dermal permissible exposure limit specified in 29 CFR Part 1910, Subparts G and Z.

"Published exposure level" means the exposure limits published in "NIOSH Recommendations for Occupational Health Standards" dated 1986 incorporated by reference, or if none is specified, the exposure limits published in the standards specified by the American Conference of Governmental Industrial Hygienists in their publication "Threshold Limit Values and Biological Exposure Indices for 1987-88" dated 1987 incorporated by reference.

"Post emergency response" means that portion of an emergency response performed after the immediate threat of a release has been stabilized or eliminated and clean-up of the site has begun.

If post emergency response is performed by an employer's own employees who were part of the initial emergency response, it is considered to be part of the initial response and not post emergency response. However, if a group of an employer's own employees, separate from the group providing initial response, performs the clean-up operation, then the separate group of employees would be considered to be performing post-emergency response and subject to paragraph (q)(11) of this section.

"Qualified person" means a person with specific training, knowledge and experience in the area for which the person has the responsibility and the authority to control.

"Site safety and health supervisor (or official)" means the individual located on a hazardous waste site who is responsible to the employer and has the authority and knowledge necessary to implement the site safety and health plan and verify compliance with applicable safety and health requirements.

"Small quantity generator" means a generator of hazardous wastes who in any calendar month generates no more than 1,000 kilograms (2,205 pounds) of hazardous waste in that month.

"Uncontrolled hazardous waste site," means an area identified as an uncontrolled hazardous waste site by a governmental body, whether Federal, state, local or other where an accumulation of hazardous substances creates a threat to the health and safety of individuals or the environment or both. Some sites are found on public lands such as those created by former municipal, county or state landfills where illegal or poorly managed waste disposal has taken place. Other sites are found on private property, often belonging to generators or former generators of hazardous substance wastes. Examples of such sites include, but are not limited to, surface impoundments, landfills, dumps, and tank or drum farms. Normal operations at TSD sites are not covered by this definition.

Table 1 - Personal Protective Equipment

Personal protective equipment to protect the body against contact with known or anticipated hazardous substances or chemicals is divided into four categories:

1. *Level A* protection will be worn when the highest level of respiratory skin, eye, and mucous membrane protection is needed.

    a. Pressure demand, self contained breathing apparatus.
    b. Fully-encapsulating chemical resistant suit.
    c. Gloves, inner, chemical resistant
    d. Gloves, outer, chemical resistant.
    e. Boots, chemical resistant depending on suit boot construction, worn over or under suit boot.
    f. Hard hat (under suit).
    g. Coveralls (under suit).
    h. Two-way radio communications (intrinsically safe).
    i. Protective footwear.

2. *Level B* protection will be selected when the highest level of respiratory protection is needed, but a lesser level of skin and eye protection. Level B protection is the minimum level recommended on the initial site entries until the hazards have been further identified and defined by monitoring, sampling, and other reliable methods of analysis, and personnel equipment corresponding with those findings utilized.

    a. Pressure-demand self contained breathing apparatus; Chemical resistant clothing (overalls and long sleeved.
    b. jacket, coveralls, hooded two piece splash suit, disposable chemical resistant coveralls).
    c. Coveralls (under splash suit).
    d. Gloves, outer, chemical resistant.
    e. Gloves, inner, chemical resistant.
    f. Boots, outer, chemical resistant.
    g. Two-way radio communications (intrinsically safe).
    h. Hard hat.
    i. Protective footwear.

3. *Level C* protection will be selected when the type of airborne substance is known, concentration measured, criteria for using air-purifying respirators met, and skin and eye exposure is unlikely. Periodic monitoring of the air must be performed.

    a. Full-face, air-purifying respirator (MSHA/NIOSH approved).
    b. Chemical resistant clothing (one piece coverall, hooded two piece chemical) splash suit, chemical resistant hood and apron, disposable chemical resistant coveralls.)
    c. Gloves, outer, chemical resistant. –Gloves, inner, chemical resistant. –Boots, chemical resistant.
    d. Cloth coveralls (inside chemical protective clothing). –Two-way radio communications (intrinsically safe).

e. Hard hat.
f. Escape mask (optional).
g. Protective footwear.

4. *Level D* is primarily a work uniform. It will not be worn on any site where respiratory or skin hazards exist.

a. Gloves, outer, chemical resistant.
b. Gloves, inner, chemical resistant.
c. Boots, chemical resistant.
d. Safety glasses.
e. Hard Hat.
f. Protective footwear.

Table 2 - Respiratory Protection Guide

The respiratory protection guide has been prepared in accordance with OSHA 29 CFR Part 1910.134 which specifies that respirators be selected on the basis of the hazards to which workers may be exposed. The American National Standards Institute (ANSI) Z88.2-1980 standard on respiratory practice can be reference for further guidance.

The type of atmospheric concentration of substances need to be identified and may require different level of respiratory protection and skin protection. The following criteria is provided for each level of protection. Selection of the proper personal protection involves meeting one or more criteria.

Level B Protection

1. Atmospheric environments with IDLH concentrations of specific substances that do not represent a skin absorption hazard;
2. Atmospheric environments or airborne contaminant concentrations that do not meet the criteria for use of air-purifying respirators;
3. Atmospheres that contain less that 19.5 percent oxygen;
4. Atmospheric environments with the presence of unknown vapors or gases as indicated by direct-reading organic vapor detection instrument, but vapors and gases that are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through intact skin.

Level C Protection

1. Airborne contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin;
2. Air contaminants have been identified, concentrations measured, and an appropriate respirator canister is available that can remove the contaminant;
3. All criteria for the use of air-purifying respirators are met.

Level D Protection

1. The atmosphere contains no known hazard;
2. Work, functions preclude splashes, immersion, or the potential unexpected inhalation of or contact with hazardous levels of any chemicals.
3. Hazard assessment which initially determines the level of protection to be worn by all personnel will be checked and documented by monitoring procedures.
4. The level of protection depends on the toxicity of chemicals onsite, their concentration in the air, potential for skin contact, flammability characteristics, and general waste site conditions (such as ambient temperature, topography, accessibility, etc.).

General Considerations

- Atmospheres that are oxygen deficient (less that 19.5% 0_2)or immediately dangerous to life and health (IDLH)–producing an immediate irreversible or effect on health.

- Atmospheres that may contain high concentrations of unknown levels exceeding the Threshold Limit Values (TLV) for known airborne chemicals, (but are not considered to be Immediately Dangerous to Life and Health (IDLH) conditions).
- Atmospheres in which the airborne concentrations of all contaminants is known to be less than 50X the respective ACGIH TLVs and provide good warning properties (taste, smell, and irritation)
- Emergency escape.
- Potential splash of liquid irritant to chest or facial area (full-face respirator not otherwise specified).
- General eye protection while on waste site.
- Emergency rescue.

Respiratory Protection Selection

Final selection of respirators is based on the following criteria:

a. Nature of the situation encountered;
b. Activities of workers in the hazardous area;
c. Type of inhalation hazard including physical properties, physiological effects on the body, warning properties (e.g., small or irritation) air borne contaminant concentration, established TLVs for toxic materials and established IDLH concentration of toxic material;
d. Location of hazardous area in relation to nearest source of acceptable air supply;
e. Duration of respirator use.

Air-purifying respirators can be used in atmospheres that contain adequate oxygen (19.5% or more) contaminated with chemicals that have good warning properties (taste, smell, irritation) and are not immediately dangerous to life and health. When air purifying respirators are utilized the TLV of the contaminant and the protection factor of the mask are used to determine the maximum use limit of cartridge respirator. As a standard practice, cartridges are changed daily.

Fit-Testing

Oxford requires all employees who may use a respirator to go through qualitative fit-testing.

The following policies are also adhered to in the fitting and use of the respirators:

1. An employee must have passed the fit test.
2. Facial hair, such as beards, sideburns, or certain mustaches that may interfere with the fit test, are not allowed.
3. Persons requiring corrective lenses are provided with specially mounted lenses inside the full-face mask. Under no circumstances may contact lenses and/or glasses be worn while using full-face respirators.

Respirator training is conducted during annual or initial health and safety training. Instruction is given the proper cleaning of respirators, the respirators' capabilities and limitations.

END OF SECTION

31.0 ACKNOWLEDGEMENT

ALL SITE PERSONNEL HAVE READ THE ABOVE PLAN AND ATTACHED SAFETY AND HYGIENE RULES AND ARE FAMILIAR WITH ITS PROVISIONS.

I certify that I have read the Health & Safety Plan, its content, and limitations and agree to abide by the procedures discussed herein to ensure the health and safety of the project personnel and the general public. I further certify that I have received the proper training as set forth in 29 CFR 1910.120 and recognize that toxic and hazardous materials may exist on the site.

AFFILIATION	PRINT NAME	JOB FUNCTION	SIGNATURE	DATE

SAFETY & HYGIENE RULES

The following list of standing orders shall be enforced in the Exclusion Zone and Contamination Reduction/Decontamination Zone.

1) No smoking, eating, or drinking in these zones.

2) No horseplay.

3) No matches or lighters in this zone.

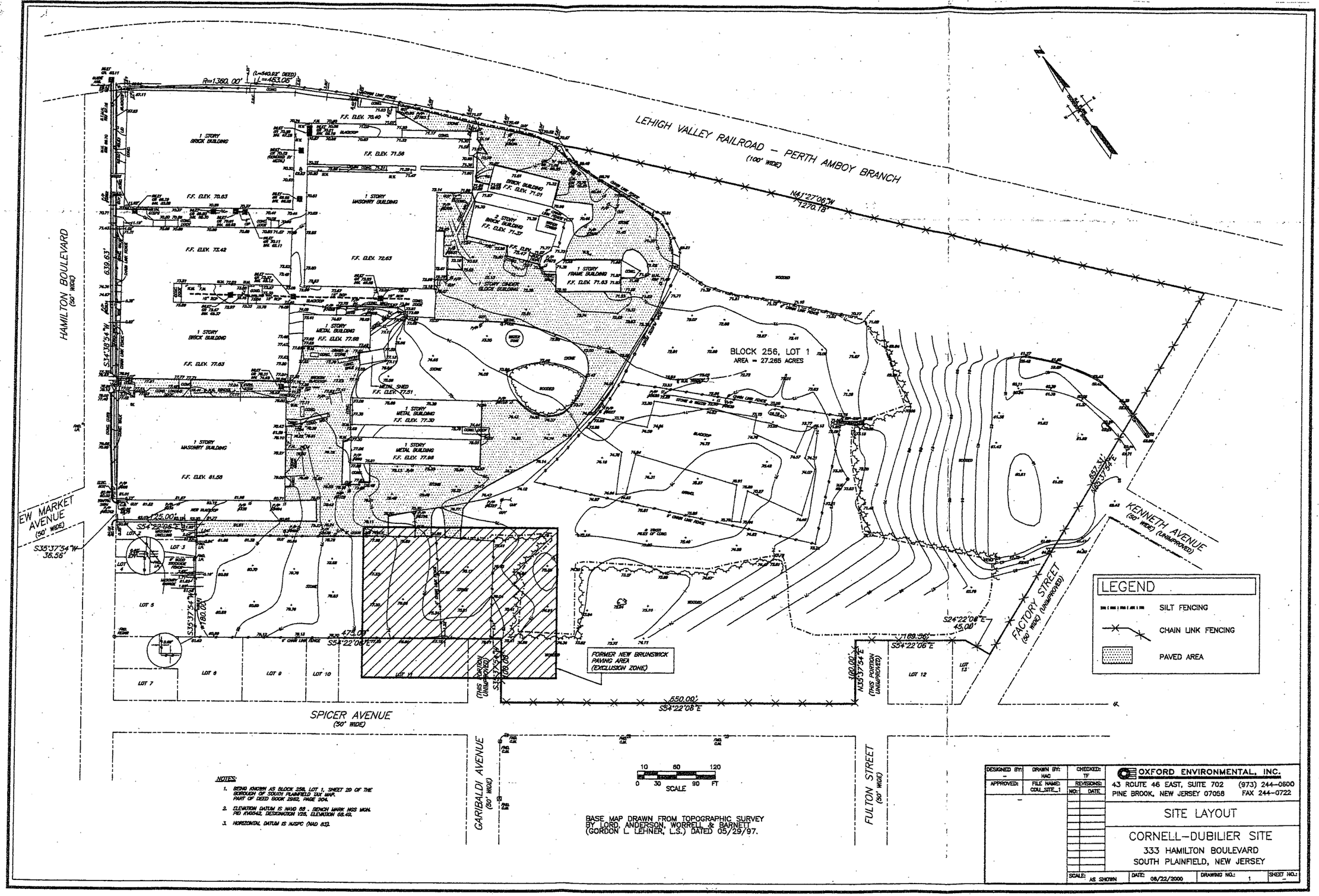
4) Check-in on entering Exclusion zone.

5) Checkout on exiting Exclusion zone.

6) Implement the buddy and communications system.

7) Line of sight must be in position.

8) Wear appropriate level of protection as defined in this HASP.



NOTES:

1. BEING KNOWN AS BLOCK 256, LOT 1, SHEET 20 OF THE BOROUGH OF SOUTH PLAINFIELD TAX MAP. PART OF DEED BOOK 2982, PAGE 304.
2. ELEVATION DATUM IS NAVD 88 - BENCH MARK MSS MON. PID KV0542, DESIGNATION V25, ELEVATION 68.42.
3. HORIZONTAL DATUM IS NJSPC (NAD 83).

BASE MAP DRAWN FROM TOPOGRAPHIC SURVEY BY LORD, ANDERSON, WORRELL & BARNETT (GORDON L. LEHNER, L.S.) DATED 05/29/97.

DESIGNED BY: –	DRAWN BY: HAG	CHECKED: TF	OXFORD ENVIRONMENTAL, INC.
APPROVED: –	FILE NAME: CDU_SITE_1	REVISIONS: NO: DATE:	43 ROUTE 46 EAST, SUITE 702 (973) 244-0600 PINE BROOK, NEW JERSEY 07058 FAX 244-0722

SITE LAYOUT

CORNELL-DUBILIER SITE

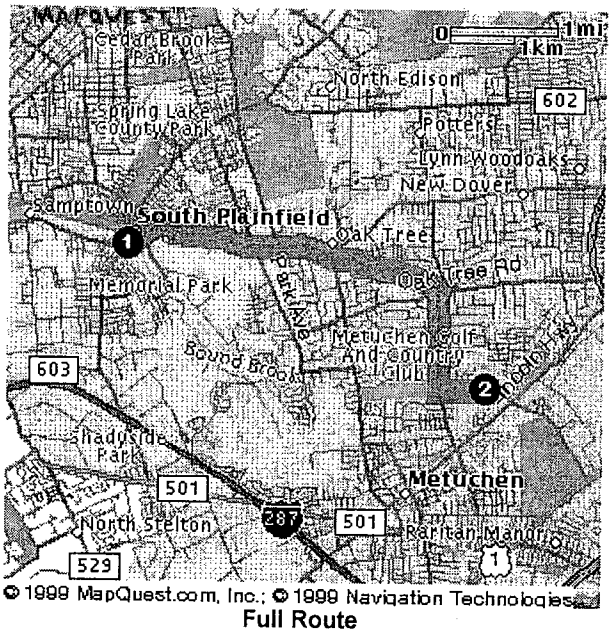
333 HAMILTON BOULEVARD
SOUTH PLAINFIELD, NEW JERSEY

SCALE:	DATE:	DRAWING NO.:	SHEET NO.:
AS SHOWN	08/22/2000	1	

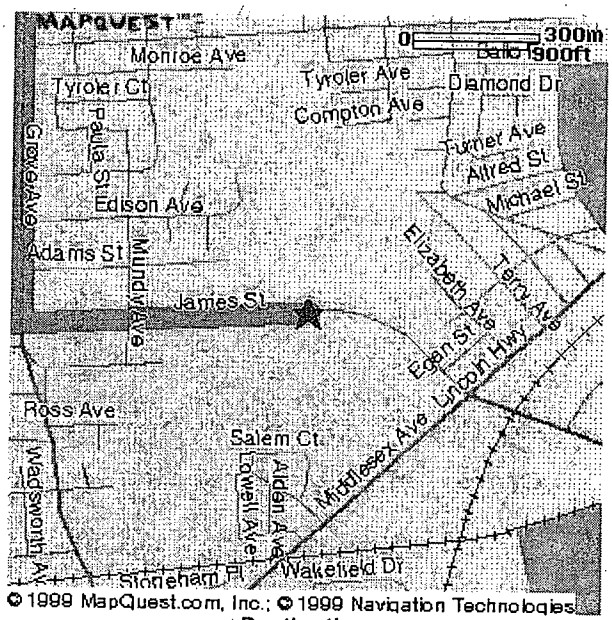
1 in.

Starting From:	Arriving At:	Distance:	Approximate Travel Time:	
333 Hamilton Boulevard South Plainfield, NJ 07080-3339	65 James Street Edison, NJ 08820-3947	4.8 miles	12 mins	Reverse Driving Directions

	Directions	Miles
1.	Start out going Southwest on HAMILTON BLVD towards CR-603 by turning left.	0.0
2.	Turn SHARP RIGHT onto LAKEVIEW AVE/CR-603.	0.2
3.	Turn RIGHT onto CHURCH ST.	0.1
4.	Turn RIGHT onto HAMILTON BLVD.	0.1
5.	Turn LEFT onto S PLAINFIELD AVE.	0.0
6.	Turn RIGHT onto FRONT ST.	0.1
7.	Turn LEFT onto OAK TREE AVE.	1.1
8.	OAK TREE AVE becomes OAK TREE AVE/CR-604.	0.2
9.	OAK TREE AVE/CR-604 becomes OAK TREE RD/CR-604.	1.6
10.	Turn RIGHT onto GROVE AVE.	1.0
11.	Turn LEFT onto JAMES ST.	0.4



Full Route



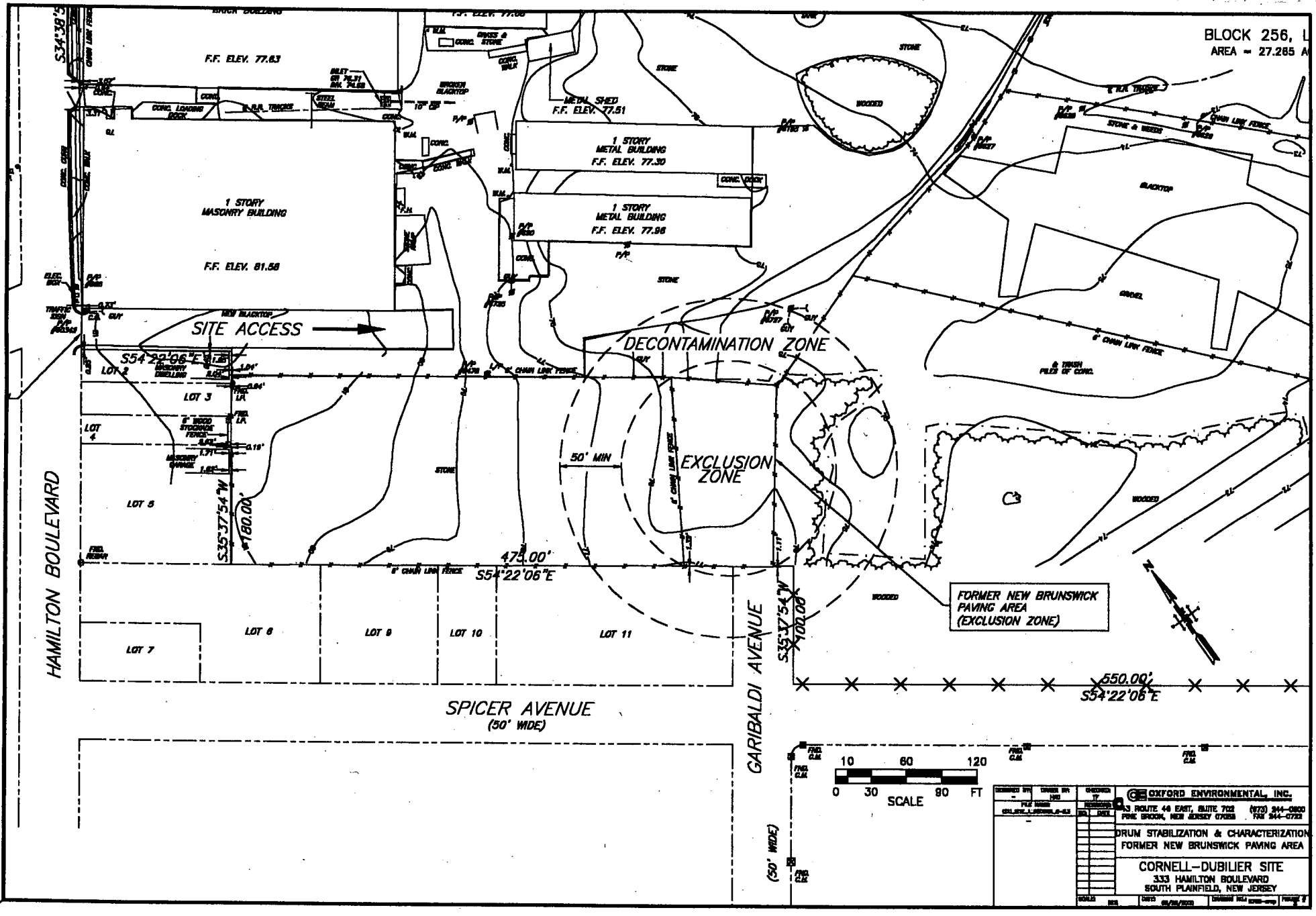
Destination

OXFORD ENVIRONMENTAL, INC.
43 Route 46 East, Suite 702
Pine Brook, New Jersey 07058

MAP TO NEAREST HOSPITAL
CORNELL-SUBILIER ELECTRONICS SITE
SOUTH PLAINFIELD, NEW JERSEY

Drawn By: TMF

Date: 05/30/00 | Scale: NTS | Figure: 2


BLOCK 256, L
AREA = 27.285 A
HAMILTON BOULEVARD
SPICER AVENUE
(50' WIDE)
GARIBALDI AVENUE
(50' WIDE)
SITE ACCESS
DECONTAMINATION ZONE
EXCLUSION ZONE
50' MIN
FORMER NEW BRUNSWICK PAVING AREA (EXCLUSION ZONE)
1 STORY MASONRY BUILDING
F.F. ELEV. 81.58
F.F. ELEV. 77.63
METAL SHED F.F. ELEV. 77.51
1 STORY METAL BUILDING F.F. ELEV. 77.30
1 STORY METAL BUILDING F.F. ELEV. 77.96
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
S34°38'5
S54°22'06"E 81.28'
S35°37'54"W 180.00'
475.00'
S54°22'06"E
S35°37'54"W 100.00'
550.00'
S54°22'06"E
WOODED
STONE
GRAVEL
BLACKTOP
6' CHAIN LINK FENCE
NEW BLACKTOP
SCALE
0 30 90 FT
10 60 120
OXFORD ENVIRONMENTAL, INC.
DRUM STABILIZATION & CHARACTERIZATION
FORMER NEW BRUNSWICK PAVING AREA
CORNELL-DUBILIER SITE
333 HAMILTON BOULEVARD
SOUTH PLAINFIELD, NEW JERSEY